THE UREMIC CONVULSIONS OF PREGNANT, PARTURIENT, AND LYING-IN WOMEN.

[The following is the conclusion of Dr Matthews Duncan's translation from Dr Braun's work. See p. 1031.]

Differential Diagnosis of Uremic Eclampsia and other affections of the Motor system of Nerves.

Uremic eclampsia may be distinguished from all other convulsions which may arise from habitual epilepsy, hysteria, apoplexy, meningitis, thrombosis of the sinuses, typhus, poisons, anaemia, cholera, cholema, etc., by the following circumstances:

1. In uremic eclampsia the urine is rich in albumen and cylindrical clots, deficient in uric acid and urea, and sometimes appears of a red colour from blood globules, or from haematin that has been set free; edematous infiltrations of the face and of the extremities are seldom wanting, but often are only slight; considerable swelling of the spleen is never present except when the disease has been preceded by intermittent fever. The fits come on suddenly, without any nervous symptoms having been present for any length of time; sometimes they are anticipated by headache, giddiness, amblyopia, amaurosis, nausea, and vomiting. The fits are very acute, and return in short intervals of minutes or hours, often in one day. They often occur only once in a lifetime, and it is only rarely that they return in several successive pregnancies. Labour is generally induced by them after they have continued for several hours; they exercise a very injurious influence on the life of the fetus, and are not unfrequently followed by puerperal diseases. Insensibility generally supervenes after the first few fits, and often returns with the commencement of cure after a comatose condition may have continued for a few days. The symptoms of Bright's disease generally disappear after a few days, sometimes twelve days after delivery, or the cessation of the eclampsia. If the disease ends in death, then generally, in the post mortem examination, we find oedema and anaemia of the brain, oedema of the lungs, and Brightian degeneration of the kidneys; death, therefore, is generally the effect of the uremic condition of the blood, and it is only very seldom the consequence of a secondary apoplexy of the brain.

2. Cholemaic eclampsia arises from the blood being overcharged with the constituents of bile and the products of their decomposition, and is connected with acute atrophy of the liver (Rokitansky), icterus typhoides (Lebert), pyaemia and puerperal diseases of pregnancy, labour, and child-bed. It generally terminates fatally after continuing several hours or days.

Acute atrophy of the liver is recognised,—during life, by the indications of a rapidly advancing diminution in bulk of the liver (in consequence of parenchymatous inflammation, according to Bamberger and Wedl); after death, by mi-
CROSCOPICAL and RAVING, in occurrence the whole small, atrophy or a sive but discover ducts, sometimes particular portions of the bile, belonging the liver becomes flatter and thinner in the state of decomposition, its decomposition, the baneful influence of bile, crystalline products of the decomposition of albuminous substances—may, according to Frerich's views, produce cholemic eclampsia. Virchow, however, feels himself unable to grant this, because leucin and tyrosin are also found in typhus and exanthematosus diseases, and may possibly be formed not till after death. Bamberger thinks it more probable that cholemic cerebral phenomena are produced by the acids of bile resin (taurocholic and glycocholic acid), and by the possible products of their decomposition, than by the biliary pigments.

The skin is of a light sulphur colour. The urine contains a large quantity of the colouring matter of the bile, and the feaces are generally coloured with bile.

As is well-known, the presence of biliary pigment in the urine is demonstrated by mixing it with nitric acid (the best for the purpose being what contains some nitrous acid). A green colour is produced, which generally quickly passes  

1 Spaeth: Zeitsch. d. Ges. Wiener Aerzte. 1854.  
2 Clinik der Geburtsh. Erlangen. 1855, S. 246.  
3 Bamberger, H.: In Virchow's Handb. d. spez. Path. u. Therap. Bd. VI. Abth. I. Zweite Hälftte. S. 525-590.
into violet, blue, red, and orange. Instead of nitric acid, a mixture of equal portions of nitric and sulphuric acids may be used, and, in this way, with smaller amounts of biliary colouring matter, the reaction often comes out more distinctly.

When choleæmia and Bright's disease occur together, the following method may, according to Heller, be used with urine containing albumen: He puts a few grammes of muriatic acid into a cup-shaped glass, and passes into it drop by drop the urine to be examined, until the albumen begins to coagulate; then, keeping the fluids agitated, nitric acid is added, whereupon, if biliary pigment be present, a distinct green colour appears. The acids of the bile (taurocholic and glycoeholie acid) are almost never found in the urine in cholemic eclampsia. This may be proved to any one by the negative results of Pettenkofer's test. Two or three drops of a solution of sugar (one part of sugar to four parts of water) are added to the urine, and then gradually pure concentrated sulphuric acid, up to five times the volume of the quantity of urine to be examined. Excessive heating of the mixture is to be avoided by plunging the test glass in a cool medium. When the acids of biliary resin are present, a purple colour gradually appears, but often not till after some hours.

But as a decided reaction is only rarely produced in the urine as it is passed, it is in every case preferable to evaporate the urine in a water-bath, and then produce the above-mentioned reaction with the alcoholic extract, which will, by its bitter taste, betray the presence of biliary acids.

3. Hysterical convulsions occur, during very painful deliveries, in women who, in the course of pregnancy, chiefly at the times menstruation might have occurred, suffer from the well-known hysterical affections, as spasm of the glottis, of the pharynx (Globus hystericus), dyspnoea, tendency to coughing, anaesthesia of the skin, etc. They are not accompanied by complete insensibility, and have no injurious influence on the life of the foetus or of the mother. The urine is deficient in solid contents, but contains no albumen or cylindrical clots, and generally contains sugar (R. Wagner, Valentin).1

In the severest attacks, the psychical life is never affected so as to produce loss of consciousness and perception. A hysterical patient falls into a convulsive, tetanic, or cataleptic attack with a scream, and closes the eyes when a dazzling light is presented to them. In this way these attacks may be clearly distinguished from epilepsy and eclampsia.

The paroxysms appear in shorter or longer intervals, sometimes during labour when the child's head is passing the os uteri or os vaginæ. They often stand in evident connection with the pains, and sometimes appear at irregular periods during pregnancy, or apart from it during the presence of the most different diseases of the uterus, or during attempts at replacing a retroverted gravid uterus (Romberg). In the intervals, a bodily and mental irritability and weakness are characteristics, but consciousness always persists. In hysterical convulsions, diseased conditions of the central organs of the nervous system, or indeed other palpable changes in the organism, cannot be demonstrated.

The hysteric fits manifest themselves in a manner varying according to the period at which pregnancy has arrived. In the first four months of pregnancy, they have most likeness to ordinary hysterical fits—globus hystéricus, oppression, difficulty of breathing, bending backwards of the body, convulsive motions of the limbs; or they may assume the milder forms of anguish and oppression in the chest, which find vent in involuntary weeping or laughing, or may increase to the ecstatic form of hysteria.

In the second half of pregnancy, hysterical convulsions appear on very slight irritations; for example, motions of the child causing pain while there is a state of hyperæsthesia of the internal surface of the womb; and permanent nervous diseases sometimes come on, as paraplegia, or paralysis of one or more of the

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1 Valentin: *Die Hysterie und ihre Heilung*. Erlangen, 1852.
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extremities, which, however, do not disturb the pregnancy, and are often perfectly cured after delivery at the full time (Gendrin). 1

4. Idiopathic epileptic convulsions are habitual, chronic, and often recur during pregnancy, with intervals of days or weeks, and rarely happen several times in one day; they do not interfere with the pregnancy, and have no injurious influence upon the life of the foetus, or the health of the mother in other respects.

Epileptic fits, even when they have occurred repeatedly during pregnancy, make their appearance only rarely during labour; and when they do so, cause no interruption to the advance and delivery of the child and placenta. The aura epileptica generally precedes these attacks, which are characterized by insensibility, and distinct consciousness generally soon returns after the fit.

All Brightian and uremic symptoms are altogether wanting, except in the case of an epileptic being afterwards seized with Bright's disease. Hitherto, such complications have been very rarely observed.

Loss of consciousness, with persistence of reflex sensibility, continues from the beginning to the end of the paroxysm; for touching the eyelids causes motions of them, and sprinkling the face with cold water causes, during the fit, a starting of the whole body—phenomena not observed in uremic eclampsia. The spasm of the pharynx, which is constantly present, hinders the respiration, and causes congestion of the head, swelling of the veins, and a cyanotic appearance of the face. In consequence of the presence of trismus, trachelismus, and laryngismus, the saliva accumulates in the mouth, and passes out of it as foam. Attacks of this kind often terminate in deep sleep, sometimes without it, and in a few hours afterwards the patients are very well. Epileptic cases are very little influenced by pregnancy, labour, or child-bed; and sometimes are ameliorated, sometimes aggravated, in the course of the function of reproduction. The chronic character is sufficient to distinguish epilepsy from the ordinary acute uremic or apoplectic convulsions, if there be a similarity in the convulsive attacks. 2

Death very rarely occurs, during a paroxysm of epilepsy, from secondary asphyxia, rupture of a vessel in the brain or in the lungs, but mostly at a later period and unconnected with the fits. In the dead bodies of epileptics, no pathological changes are observed which can be regarded as having any constant relation to the disease.

5. Apoplectic or cerebral convulsions are characterized by these circumstances: that the spasms continue and endure; that with their sudden appearance and frequent (often in a few minutes) recurrence consciousness is destroyed, and the pulse becomes slow and hard; that paralysis of the facial muscles and of the extremities of one side (hemiplegia), and clonic spasms, come on in the paralysed parts; that the comatose condition precedes the convulsions instead of following them, as in uremic eclampsia; and that the breathing is much slower and quieter than in the intervals of uremic attacks. Enlargement of the spleen is not met with. The symptoms of disease of the kidneys and of uremia are absent, and the phosphates are sometimes found in the urine in great quantity. Apoplexy ends generally in idiocy or death.

During pregnancy, apoplexy of the brain occurs as seldom as during labour, so that no intimate connection between them can be established.

6. Convolusions originating in meningitis and encephalitis are distinguished by premonitory pain in the head, radiating to the shoulders; by the accompaniment of violent fever, great heat of skin, and the quick superintention of quiet or furious delirium; by absence of enlargement of the spleen; by remarkable increase of the phosphates, high specific gravity of the urine, its acid reaction, generally insconsiderable diminution of the chlorides; and by the absence of Brightian and uremic symptoms.

These convulsions are sometimes followed by paralysis of the right side when the left half of the brain is affected, and vice versa.

1 Gendrin: Gaz. des Hôp. 1854. Nr. 1, 5.
2 Romberg: Nervenkrankheiten. Berlin, 1851.
Thrombosis of the longitudinal sinuses can scarcely be distinguished from encephalitis during life (Mikschick).  

7. In acute tuberculosis of the membranes of the brain, there is no albumen in the urine; it has a high specific gravity (1028–35), acid reaction; that is, little or no diminution of the chlorides, but there is a large quantity of urea, uric acid, uro-erythrin, moderate increase of the alcoholic extract, and never any diminution of the quantity of phosphates.

Hearing and speaking are rarely interfered with. During the convulsions, the pulse is frequent; during the coma, slow. The coma generally comes on after delirium. Cramps sometimes occur in the neighbourhood of the neck; but they and the convulsions cease when the coma appears, and paralysis, specially of the urinary bladder and bowels, come on.

8. Convulsions originating in typhus are known by fever, languor, confused headache, and loss of appetite preceding them for a longer or shorter time. A so-called popular typhus exanthem (Roseola) is generally to be found on the chest, and startings of the tendons are remarked. After the convulsive attacks, there does not come on a lethargic condition characterized by deep stertor, but a state of heaviness with occasional delirium. A more or less considerable enlargement of the spleen may be demonstrated by percussion, which cannot be accounted for by the history of the case indicating a previous attack of intermitting fever. In the acid urine of typhus patients carbonate of ammonia is found. The reaction of the fresh urine is generally alkaline. The urea and uric acid are never increased, the uro-erythrin is in small quantity or altogether wanting, the alcoholic extract is considerably increased, and the chlorides are diminished to a very remarkable degree. The smell is ammoniacal; the phosphates are in small quantity or altogether wanting. In the sediment is found much urate of ammonia with a little triple phosphate. The specific gravity is low (1017). Traces of albumen are met with only in the most dangerous and protracted cases of typhus, according to the very numerous researches of Heller 2 and Tomowitz.  

9. Convulsions arising from anæmia are distinguished by the symptoms of the latter condition,—waxy yellow colour of face, the redness of the lips completely blanched, top-murmur in the vessels, coldness of skin, small threadlike quick pulse, small spleen, etc., as well as by the easily obtained history of the case. The convulsive motions of the extremities are in most cases only trifling; generally, indeed, the spasms affect only single muscles. Anæmic convulsions are justly regarded as a symptom of the last agony.  

10. Eclampsia toxica, quickly supervening on eating, or introduction into the system otherwise, of mineral, vegetable, and animal poisons, has the greatest resemblance to uremic eclampsia, but is distinguished from it by absence of all symptoms of diabetes albuminosus and uremia, by pains in the region of the stomach and swelling of the same part, vomiting, gastritis, the chemical evidence of the existence of poison in the evacuations, and by various symptoms characteristic of the different kinds of poisoning.

a. Eclampsia saturnina (plumbismus) is distinguished by the gum having slate-grey markings, slow pulse, hard, dry, and icteric coloration of the skin, and absence of diabetes albuminosus (Grissolle, Tanquerel des Planches).

b. In eclampsia argyralis (poisoning with nitrate of silver), intense colicky pains are absent.

c. In eclampsia mercurialis, the mercurial tremor is almost never wanting.

d. In stibismus and
e. Cuprismus cerebrospinalis, intestinal symptoms are almost always wanting, and cerebral symptoms occur, not at the end, but the beginning of the poisoning.

f. In arsenicimus cerebrospinalis, when the poison is applied to the stomach,

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1 Mikschick: Wiener med. Wochenschr. 1855, Nr. 15.
2 Heller: Archiv. f. phys. u. path. Chemie u. Mikroskopie.
3 Tomowitz: Zeitsch. d. Ges. Wiener Aerzte, II. Bd. Wien. 1851.
Vomiting always comes on. When it is absorbed through wounds of the skin, all symptoms of intestinal disorder are awaiting; and it is then to be distinguished from narcotic poisoning only by chemical examination of the evacuations of the poisoned.

\( g \). Oxalysmus cerebrospinalis cannot be distinguished from strychnismus except by the interrupted pulsation of the heart.

\( h \). Hydrocyanismus is known by the smell of bitter almonds diffused at every expiration.

\( i \). Acute alcoholismus, appearing in the form of eclampsia in young individuals, in consequence of intoxication with spirituous drinks, is recognised by the history of the case, by the alcoholic smell of the expired air, by acid eructations, and by the absence of all the phenomena of albuminuria and uremia.

\( j \). Poisoning by strychnine and bractine is characterized by great susceptibility to terror through insignificant irritations (noise, light, draught of air, touch), by the tetanic form of the spasms, by agitative movements of individual sets of muscles and of the eyes, by continued retention of consciousness, and by remarkable paralysis of nerves after the disappearance of the spasm.

\( k \). Eclampsia from poisoning with picrotoxin, from the berries of menispernum cocculus, is characterized by tetanic attacks succeeded by spasms of the muscles for mastication, salivation, and peculiar clonic spasms of the limbs (swimming motions).

\( l \). Poisoning by hemlock (conicisimus) has this peculiarity, that anaesthesia and adynamia begin at the feet, which make the gait staggering, and afterwards walking altogether impossible (from paralysis). Then inability to utter articulate sounds, loss of sight, with great heaviness of the eyes, come on, while consciousness remains entire.

\( m \). Nicotismus (poisoning by tobacco) is distinguished by sensations of choking, vomiting, diarrhoea, convulsive trembling, unfrequent small pulse, pallor of the skin, which is covered with a cold sweat, salivation, and asphyxia.

\( n \). Aconitismus manifests itself either by suddenly occurring paralysis, asphyxia, or syncope. The extremities are pale and ice-cold. Consciousness is long of disappearing—shortly before death.

\( o \). Colchicismus resembles either a distinct gastro-enteritis or Asiatic cholera, and tetanic convulsions close the scene.

\( p \). In atropismus (Atropa belladonna, Datura stramonium, Hyoscyamus niger) the prominent symptoms are, extraordinary dryness of the mouth and throat, which are of a lively red colour, completely suppressed secretion of saliva, dysphagia, pulsation of the vessels of the neck, pseudopsia, diplopia, hallucinations, sardonic laughing, delirium, and madness, with tendency to get up and run away.

\( q \). Convulsions from acute poisoning by phosphorus (phosphorismus cerebrospinalis) are distinguished from uremic eclampsia by this circumstance, that the matters vomited, the feces, the urine, the pulmonary exhalations, and the sweat, contain phosphorus, and glow in the dark.

\( r \). The diagnosis of morphinismus is arrived at only by analysis of the evacuations from the body. But even in this way the object is not always gained.

\( s \). In ergotismus convulsivus the patient complains of suddenly-appearing giddiness, blindness, trembling of the limbs, convulsive motions, tonic spasmodic contractions of the flexor muscles, choking, vain attempts to vomit, cramplike tension of the abdomen, retention of urine and feces. The pulse is small and contracted; the expression of the face is disfigured and sallow. Death happens during insensibility and convulsions.

\( t \). Botulismus (poisoning by sausages) is recognised by the occurrence of giddiness and stupification, dryness and livid coloration of the conjunctiva, angular arrangement of the edge of the pupils, pain in the eye-balls, and paralytic condition of the eyelids. Comatose drowsiness, burning in the throat, difficulty in swallowing, obstinate constipation, exfoliation of the epidermis, asphyxia, or slight convulsions, precede death.
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u. Echidnismus1 (poisoning by the bites of snakes) can scarcely be confounded with eclampsia puerperalis, as the anamnesis, the presence of a variously coloured and very painful swelling, the form of the wound with one or two fine stings or scratches ¼" to ½" distant from one another, languor, faintings, loss of strength, convulsive spasms of the face or other parts of the body, even irregular or epileptic convulsions, fearful cardiac anguish, with frequent intercurrent swoons, entire pulselessness, and almost invariably frequent vomiting of bilious mucous matters, prevent any doubt being had as to the correct diagnosis (Falck).2

11. Chorea gravidarum (Scelotyrbre)3 appears as aimless spasmodic movements of single or several groups of muscles, and is distinguished from the general convulsions that we have described by this, that the violent convulsive motions are quite partial in the upper or lower extremities, and come on at a definite time of the day, the consciousness and reason are not in the least disturbed, the disease may continue for months, all the functions of the body go on undisturbed, and it is generally completely cured only after delivery at the full time or prematurely. Frank,4 Ingleby,5 Lever,6 Romberg,7 Scanzoni,8 Duncan.9

12. Fainting fits (dystocia lipothymica) often appear during or shortly after delivery, oftener after losses of blood, more rarely from great force of pains, suffering, fright, too great heat or bad ventilation of the chamber, inhalation of carbonaceous fumes, or a long-continued noise. It is characterized by sudden falling down, disappearance of consciousness, striking paleness of face, short duration, and the absence of all general or partial convulsions. Hence it is hardly possible to confound it with eclamptic coma.

Prognosis of Ureæmic Eclampsia.

In eclampsia the prognosis must always indicate danger to life, since certainly, hitherto, 30 per cent. of the cases have proved fatal. From the nature of the influence exerted by the ureæmic intoxication, the prognosis embraces several considerations, as, in reference to the convulsions of Bright's disease, and the subsequent conditions, as mania, hemiplegia, amaurosis, hemeralopia, and abnormal puerperal processes,—in reference, also, to the life of the foetus, and the influence of the disease in causing premature labour and abortion.

Ureæmic eclampsia terminates more frequently in complete recovery or death, than in consequent long-protracted sickness. Its dangerous character depends on the following circumstances:

a. From its commencing during pregnancy, or at the beginning of labour, where the obstructions to the extraction of the foetus, and consequent diminution of the volume of the uterus, presented by the cervix and os uteri, are still very great; and when, consequently, congestion of venous blood in the kidneys cannot be removed, as happens after earlier or later expulsion of the foetus. For the fits completely cease after evacuation of the uterus in 37 per cent., become weaker in 31 per cent., and in 32 per cent. only continue of the same severity.

b. Upon the occurrence and continuance of complete unconsciousness during the intervals of the paroxysms.

c. Upon extraordinary restlessness and exalted reflex sensibility in the intervals.

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1 ὑ ἐχιδνα—the viper.
2 Falck in Marburg: In Virchow's Handb. d. spez. Path. u. Ther. Erlangen. 1855, II. Bd. 1. Abth.
3 ὑ σκληστός—limb, ὑ τυγός—restlessness.
4 Frank, Jos.: Prac. Med. Præcepta, p. ii. v. i.
5 Ingleby: The Lancet, Nr. 860.
6 Lever: Guy's Hosp. Rep., II. Ser. v. v. vi.
7 Romberg: l. c. S. 178.
8 Scanzoni: In d. Forts. d. klinischen Vorträge von Kiwisch. Bd. III. S. 433.
9 Matthews Duncan: Edinburgh M. and S. Journal, 1854.
d. Upon deficiency or gradual weakening of the pains, or from their inefficiency in the period of dilatation.

e. Upon the pulse quickly rising in frequency, and on oedema of the lungs extending after every attack, and the dyspnoea produced by it.

f. Upon serous exudation in the brain, effusion into the ventricles, or apoplexy, with its consequent hemiplegia, coming on during the fits, in consequence of secondary hyperaemia of the meninges.

g. Upon extensive dropiscal effusions.

But if the paroxysms become regularly less frequent and violent, if no secondary disease of the brain and lungs has been produced by the fits, if the pulse continues full and quiet, the prognosis assumes a more favourable aspect, especially when coma that has continued for several hours or days disappears, when abundant diuresis goes on, and the action of the heart approximates to its natural condition.

The mortality among the sufferers does not vary according as the eclampsia has come on early or for the first time at the end of pregnancy.

Unless the uraemia proves dangerous to life, the acute Bright's disease of pregnant women seldom has so unfavourable a course as the other forms of the disease.

The affection of the kidneys often passes off without causing any striking disturbances, and is not even suspected unless the urine has been examined chemically and microscopically.

Bright's disease often induces premature labour, when no other cause is present, and this happens approximatively in 25 per cent.

The process of parturition is very painful, and gives evidence of increased reflex sensibility in cases of acute Bright's disease without ureaemia.

It can be shown that during labour, in consequence of the increased mechanical obstruction, the albuminous contents of the urine sometimes increase, and the exudation clots are found in great quantity. During child-bed, the albuminous contents always diminish, and often so quickly, that after two or three days none can be discovered.

After from six to ten days, if the child-bed patient continues to go on well, there is generally no trace of albumen to be discovered. If during child-bed the albuminuria continue for weeks, it arises either from the admixture of pus from an acute catarrh of the bladder, or from nephritis metastatica, or from a far advanced destruction of the kidneys being present, and the Bright's disease being chronic.

The cylindrical clots are, in the first days of child-bed, passed in great quantities, but disappear from the urine sooner than the albumen, and are not found at all in simple catarrh of the bladder.

Diuresis increases from after delivery till the recovery. In this way the oedema is generally made to disappear rapidly, so that generally after eight days no trace of it can be discovered; and as the bloated condition of the face generally disappears with it, patients assume a very much changed and generally more pleasant expression of face. If the decrease or disappearance of the existing oedema takes place without improvement of the disease in the kidneys, no good prognosis can be given, because uraemic eclampsia sometimes comes on in the period of child-bed without it.

If the symptoms of Bright's disease, albuminuria, cylindrical clots, and oedema, are not gone several weeks after delivery, the disease assumes a chronic character; but, even in these unfavourable circumstances, a cure is effected, although after a prolonged illness, more frequently than in Bright's disease arising from other causes.

The prognosis of the evil consequences of uraemic eclampsia is generally less unfavourable. The mania, sometimes occurring after awakening from the comatose condition, generally admits of a favourable prognosis, if it be not confounded with the delirium, which is a symptom, in many cases, of puerperal pycemia. The
mania seldom lasts more than three days, generally ends in complete recovery, is almost never followed by a continued derangement of mind, and commonly assumes a cheerful character. (Helm, the Author, Litzmann and others.)

The anaemia of pregnancy is dangerous, because it is often followed by eclampsia, and blindness after delivery often lasts for several months.

After hemeralopia evil results are rarely observed.

Hemiplegia is among the saddest occurrences, because it indicates that extravasation of blood in the brain has already taken place.

Morbid puerperal processes after eclampsia are to be the more dreaded, because, while in Bright's disease, in general, exudations into the pleura, peritoneum, and lungs are apt to take place, in cases of eclampsia the most dangerous puerperal diseases are easily induced, especially if an epidemic of zymotic diseases prevails.

The life of the foetus is endangered so long as it is nourished by the uremic blood of the mother. If it has sustained no injury during labour, and if it is mature and viable, little fear need be entertained for the suckling's life; for the possibility of the hereditary transmission of eclampsia, uremia, and Bright's disease of the kidney to a suckling, has not yet been demonstrated, and only Simpson has found albuminuria in a suckling born of an eclamptic mother.

Metrorrhagia is very dangerous from the hydremia which is generally present after uremic eclampsia, but it occurs only very rarely, if the conduct of the labour has been carefully attended to.

The dangers of eclampsia are greatly increased by complications with diseases of the heart and lungs, rupture of the uterus, etc.

The prognosis in other kinds of eclampsia is the same as when pregnancy has not occurred. Haemorrhagic, apoplectic, toxic, and anæmic eclampsias, are very often fatal; hysterical and epileptic attacks, and chorea, almost never so.

**Treatment of Bright's Disease and Ureamic Eclampsia.**

A. The prophylaxis consists of the medical and obstetrical treatment of Bright's disease during pregnancy.

Complete cure of Bright's disease is rarely obtained during pregnancy, because the cause of it, the obstruction of the venous circulation in the kidneys, is not easy of removal.

Hydremia, developing itself at an early stage of pregnancy, is somewhat ameliorated by nutritious diet, vegetable tonics, and preparations of iron. Increase of the secretion of urine does not generally produce this result. Favourable influences are sometimes observed from tepid baths, and especially vapour baths.

For the neutralization of the carbonate of ammonia in the blood, produced by the decomposition of urea, we may, according to Frerichs, make use of benzoic acid, lemon juice, or tartaric acid.

To obviate congestion of the head, costiveness should be prevented by vinegar injections, aloes, jalap, etc.

When exudation has taken place into the Malpighian capsules, and the tubuli of Bellini and Ferrein, the cylindrical clots must be removed from them, and the formation of new ones prevented. If the current of fluid proceeding from the vascular knot of the Malpighian bodies into the Malpighian capsule be strong, then the copious use of a large quantity of diluents is alone sufficient sometimes to wash away the cylindrical clots, and recovery ensues.

But if the secretion of urine be very scanty, and uremic intoxication threaten to come on, then the force of the current of fluid proceeding from the Malpighian bodies must be increased, and the cylindrical clots removed; for which purpose, besides the acids above-mentioned, the mineral waters of Selters or Vichy are best adapted.

According to the example of Frerichs, pills of tannin and extract of aloes are to be used for restoring the normal tone.

Since, by medical treatment, acute Bright's disease during pregnancy is gene-
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rally only mitigated, not cured, the question has to be considered, whether, on account of the Bright's disease, the induction of artificial premature labour be admissible, in order to avert the venous congestion and the advancement of degeneration of the kidneys.

It must be laid down as settled, that, in Bright's disease, artificial premature labour is not to be thought of so long as no symptoms of uremia have appeared, and no danger to life is present. But when the duration of the disease, the severity of the albuminuria, the quantity of cylindrical clots, a high degree of hydremia, considerable dropstail swellings, along with disturbances, dangerous to life, of the functions of the heart, lungs, brain, etc., entitle us to fear the existence of profound and advancing degeneration of the kidneys, it is quite rational to proceed to the induction of premature labour. When several symptoms indicate that the foetus is already dead, we are the more justified in proceeding, all the sooner, to this operative interference, because the dead fetus is sometimes retained for weeks in the uterus, and the danger to the mother's life may be thereby increased in a way that cannot be justified.

Observation of the proceedings of nature indicates to us this method of proceeding, for, in acute Bright's disease, pregnancy is often spontaneously interrupted; and, in that case, a fatal issue of the childbed rarely results.

When, in Bright's disease, labour comes on without eclampsia, Chailly recommends, in order to prevent the outbreak of convulsions, the use of a slight degree of narcotism by chloroform. I have not yet had occasion to make observations in regard to this point, but would make use of it in metralgia and protraction of labour in those suffering from Bright's disease.

B. Medical and obstetrical treatment of uremic eclampsia.

The medical treatment of uremic eclampsia is conducted in a similar manner in pregnancy, labour, and childbed. The chief object to be attained is to diminish as much as possible the reflex excitability, to weaken the paroxysms, in order to diminish the dangers, and to gain time for entering upon rational treatment.

In this respect, we have observed results from chloroform-narcotism which have surpassed all expectations. In uremic eclampsia, the chloroform narcotism is to be induced instantly when indications of an impending paroxysm show themselves—as great restlessness, increasing rigidity of the muscles of the arms, expiry of the interval between former paroxysms, fixity of expression, or tossing hither and thither. The narcotism is to be kept up until the premonitory symptoms of the paroxysm disappear and quiet sleep follows; a result generally attained in one minute. But if it be not possible to cut short the paroxysm, then the chloroform inhalation is not to be kept up during the convulsive attacks and the comatose condition, in order to let an abundant supply of fresh atmospheric air reach the lungs. The chloroform inhalation moderates the imminently dangerous cramps of the muscles of the neck, epiglottis, and tongue, and may be continued even during a persistent trismus, when no other medicines can be introduced into the stomach, and when loud mucous rales indicate the development of edema of the lungs.

In sixteen cases of eclampsia, occurring in succession, which I treated with chloroform and acids, complete recovery always took place. As by anaesthesia we are put into a condition suited for remarkably accelerating delivery, the preservation of the life and health of the offspring is promoted in a very gratifying manner.

Before using chloroform, it should be tested, especially by smelling and by sulphuric acid, in order, by its bad smell or its assuming a brown colour, to discover if it has been prepared from wood spirit, and has the poisonous qualities arising therefrom.

Whether chloroform operates so beneficially merely as a sedative, or whether

1 Chailly: L'Union Médic. 1853.
by chemical action it produces innocuous changes in the toxæmic blood, is as yet undecided.

Simpson is of the latter opinion, for this reason, that chloroform inhalation, according to chemical analysis, produces a transitory diabetes mellitus—hence sugar certainly appears in the urine (and also in that of animals, according to Hartmann's\(^1\) researches), and probably also in the blood; and because, out of the human body, a very small quantity of sugar added to the urine prevents the ordinary change of urea into carbonate of ammonia. Although the direct action of chloroform upon uremia is still doubtful, yet it is certain that in eclampsia chloroform is the best palliative, inasmuch as it moderates the paroxysms—the waiting for and performance of operations is shortened and facilitated—the danger to the lives of mother and child is essentially diminished; and hence it is that the already announced commendations of chloroform in puerperal eclampsia by Simpson,\(^2\) Channing,\(^3\) the Author, Seyfert,\(^4\) Chailly-Honoré, Scanzoni, Sedywick,\(^5\) Wieger, Meisinger,\(^6\) Hoogeweg,\(^7\) Leudet, Dechambre,\(^8\) and others, are constantly gaining a wider recognition. In the intervals of the fits, the direct treatment of the uremia is proceeded with—either 5–10 grain doses of benzoic acid being administered, or lemon juice, or table-spoonful doses of a solution of tartaric acid, with ice-water, when copious diuresis generally soon appears.

To moderate the secondary congestions of the head which come on during and after the paroxysms, the application of ice is useful, and also smart sprinkling with cold water (Recamier, Booth\(^9\) ); and, better still, the cold douche on the head, during which operation the head of the patient is held over the side of the bed, and the ice-water falls into a basin held beneath it.

Tepid baths of the whole body cause too much trouble when the patients are completely insensible, and therefore we never employ them.

The local application of cold has a more powerful and lasting influence against secondary hyperemia of the meninges than the use of leeches, which, on account of the restlessness of the patients, cannot be got to stick on the region of the mastoid process, where any considerable depletion can be effected through the great blood sinuses; and on the forehead no essential and direct depletion of superfluous blood from the brain is possible by this means.

Sponging the skin with tepid vinegar produces a most desirable diaphoresis, and is easily accomplished.

General depletion of blood easily produces, in uremic eclampsia, an injurious effect, because the cyanosis of the face coming on in eclamptic women is only a consequence of the spasm; because, by bleeding, the hydæmia is further increased, the nervous fits are not improved, puerperal thrombosis and pyæmia in child-bed are much to be feared; and because, not unfrequently, the paroxysms are aggravated by it, and exhaustion, fainting, and very slow reconvalescence are thereby produced.

As to the very doubtful, and sometimes even injurious, effects of venesection in uræmic eclampsia, Maygrier, Peterson,\(^10\) Kiwisch, King, Blook, Sedywick, the

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1 Hartmann, F.: *Beitrag zur Literatur über die Wirkung des Chloroforms*. Gissen, 1855.
2 Simpson: *Anaesthesia, or the employment of chloroform, etc.* Philadelphia, 1849. P. 207.
3 Channing: *A Treatise on Etherization*. Boston, 1848.
4 Seyfert: *Wien med. Wochenschr.* 1853, Nr. 12.
5 Sedywick: *Bull. de Ther.* 1850. P. 83.
6 Meisinger: *Wiener mediz. Wochenschrift*. 1853, Nr. 40.
7 Hoogeweg: *Pr. Verhandl. Zeit.* 1852, Nr. 51; und 1853, Nr. 51.
8 Dechambre: *Gaz. hebdomadaire*. 1855, Nr. 5.
9 Booth: *Journ. der conn. méd. chir.* 1853.
10 Peterson: *Lond. Med. Gaz.* 1844.
CONVULSIONS OF PREGNANCY, ETC. 1125

Author, Churchill, Litzmann, Williams, Miquel,1 Schwartz,2 Legroux, Thomas, have very strongly expressed their conscientious opinions; and myself, avoiding venesection, I have found, after long-continued observation, the best results confirm the opinion already expressed, that a "general depletion of blood in ursemic eclampsia had very seldom any valuable effect on symptoms, and generally produces irreparable injury.

We cannot reconcile with their theory the circumstance that the adherents of the hypothesis, that eclampsia is produced by hydremia, recommend venesection as a cardinal remedy. But experience has established that, when a cautious selection of single cases is made, one moderate general blood-letting is not injurious in the case of strong, full-blooded women, when there is violent pulsation of the carotids, and the face continues dark red even a considerable time after the fit, and oedema of the lung is commencing, and when, at the same time, all anaemia, chlorosis, and bodily weakness, etc., are absent; on the contrary, in rare cases, a cessation or longer interval between the fits is observed.

Since the days of Dewees, Burns, and Hamilton, it has been in many places, and still is, the custom to find the only panacea against eclampsia in abundant general blood-lettings often repeated in the course of a day—a proceeding which can be justified as little by the present state of theoretical knowledge in regard to this disease, as it is by the great mortality of mothers and children constantly produced by this method of treatment.

Cazeaux has observed, in several cases, remarkably favourable results from hemospsia (Junod's boots), in the way of soothing the convulsions by the derivative action on the head.

I consider this proceeding much more rational than dealing profusely in general blood-letting, because the blood is only momentarily withdrawn from the circulation, and the production of a transitory oedema of the extremities may free the blood for a certain time of morbid and altered serum.

The internal use of 1 to 6 grains of opium, of $\frac{1}{2}$ to 1 grain of acetate of morphia within six hours, and at the same time of 20 to 30 drops of anodyne tincture as a lavement, is specially to be recommended in those cases where chloroform and acids do not operate quickly and permanently enough, when the delivery is over, and the eclamptic fits still continue in childbed. My own observations in regard to this agree completely with those of Kiwich, Scanzoni, Kilian, Wieger, Hohl, Feist, Crede, and others.

Expectative treatment can be recommended only where delivery is nearly completed, where the attacks are not severe, and consciousness returns in the intervals.

Coma, after the cessation of the paroxysms, is most safely and best treated by complete rest of the body, mind, and organs of sense; careful avoidance of all frights; the use of benzoic and vegetable acids and much cold drink, as has already been justly remarked by Harvie, Betschler, Wieger, and others; and by moderate diaphoresis, because the comatose condition of the brain is not produced by its being congested with blood, but by serious infiltration and uraemia.

From revulsive measures, as sinapisms on the calves of the legs, hot foot and hand baths, blisters on the back of the neck, and the like, no marked result is to be expected. After the abuse of phlebotomy, musk may be of some service as an anti-spasmodic.

But this remedy is always to be dispensed with, if no vampyrismus has previously occurred in the particular case, and if the anaemia produced is not dangerous to life.

Lobach3 asserts that he has seen, in the eclampsia of pregnant women, vomiting stopped, and obstinate constipation removed, by tincture of nux vomica (four

1 Miquel, A.: Traité des Convulsions, etc. Paris, 1823.
2 Schwartz: Rigaer. Beit. I. 2. 1850.
3 Lobach: Verh. d. phys. med. Ges. zu Würzburg. 1852. III.
drops given every two hours), and the tinctura cupri acetici useful for the general spasms. On these points I have made no observations.

Hasse approves of free evacuation of the contents of the bowels by calomel in large doses, castor-oil, and especially oysters with assafoetida and vinegar, infusion of senna, croton oil, and the like, as a good derivative measure.

Hohl regards a strong emetic dose of ipecacuanha as very valuable, if the attack was preceded by an error of diet. But, by other authorities, the use of emetics is altogether rejected. We have ourselves been unable to recognise any decided influence upon the course of an eclampsia from spontaneous vomiting.

The employment of tartar emetic as a vomit has been earnestly disrecommended by Mauriceau and Kilian, and we have never seen any good from its use in small doses.

Regarding Vanoye's 1 treatment of eclampsia with ammonia (20 drops of spirits of salt, with 250 grammes of distilled water and syrup, every half hour) we have no experience. Krause 2 says that, under the use of carbonate of ammonia, he has seen elamptic attacks, not in connection with pregnancy, disappear on the occurrence of menstruation.

In every eclampsia, care is to be taken that a patient who has fallen on the ground be as soon as possible placed in bed, and protected from injuries of the head.

During the paroxysm, free movement of the extremities is to be allowed, and only the rolling of the body out of the bed is to be prevented. Every precaution must be used for the protection of the tongue, which is always protruded in the beginning of the paroxysm. This is best done by pushing it back with the side of a finger. When trismus comes on, complete shutting of the jaws must not be prevented by anything, least of all by the handle of a spoon covered with linen, as formerly used so often to be done, to the very great injury of the teeth.

Formerly, too little was known of the nature of uremic eclampsia to allow of a decision in regard to the value of directly interrupting the progress of the pregnancy and accelerating delivery; and this is the reason why, hitherto, no unanimity could be attained in reference to the indication of artificial premature labour and acceleration of delivery.

A great number of physicians, as Puzos, Osiander, Hasse, Feist, 2 Siebold, Meissner, Mad. Lachapelle, Langheinrich, Casier, 4 Krause, Caleb Rose, 5 Grenser, Gendrin, P. Dubois, and others, consider prompt careful evacuation of the uterus as the main point in the treatment of eclampsia.

The obstetrical treatment of eclampsia must be discussed from various points of view, according as the labour is far advanced, or has not yet commenced at all.

A. The treatment of eclampsia in the expulsive stage of labour is considered from the same point of view by the most different authors. All agree in this, that when the head is in a situation suitable for the application of the forceps, it should be extracted in a most cautious manner, because thereupon the attacks often completely cease, and the children are generally born living, if there have not been very many fits before the operation.

Presentation of the shoulder and pelvis, which are very rarely observed at this stage of labour in elamptic cases, are to be treated according to general principles, and require an acceleration of delivery.

B. Oxytocic treatment in the stage of dilatation is of very great importance;

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1 Vanoye: Abeille Méd. 1851. Nov.
2 Krause, A.: Die Theorie u. Praxis, etc. Berlin 1853. II. Bd. S. 503.
3 Feist: Gem. deutsch. Zeitsch. Bd. vi.
4 Casier: Presse Méd. 1853. 3.
5 Caleb Rose: Med. Times and Gaz. 1852.
for, in it, the mode of interference by operation must be chosen according to two conditions.

a. Treatment of eclampsia when the stage of dilatation is considerably advanced.

If the neck of the womb is completely dilated by the advancing head and the pains, before the arrival of the physician—if the external orifice is opened up to from 1 to 2", and the membranes are unruptured, then it is most rational, while the woman is on her side, to burst the membranes, and watch the result of the flowing off of the first waters and of the continued pains.

If the paroxysms do not cease thereupon, and if regular progress is not remarked in the further dilatation of the cervix and advance of the child, then the orifice should be fully opened up by dilatation by means of the finger.

If this be done a few minutes after the appearance of the comatose condition, or during the chloroform narcotism, new fits are never produced by it.

If, after some pains, the presenting head does not advance into the brim of the pelvis, and if some fits come on, then it is most advisable, even when the position of the head is high, and every obstetric disproportion is absent, to apply the forceps according to Hatin's method, and carefully extract the child. By using the forceps under these circumstances, we have succeeded in extracting a greater number of living children, than when, in cases of eclampsia, the hand is, without the power of choosing circumstances, introduced through a dilatable os uteri, and the extraction of the child completed by podalic version.

On account of eclampsia alone, without obstetrical disproportion, it is never justifiable to proceed to the operation of craniotomy.

Podalic version should, in cases of eclampsia, be confined to those cases only in which there is at the same time contraction of the pelvis, or an obstetrical disproportion on the part of the child.

Scarification of the cervix uteri, at a more or less advanced period of the stage of dilatation, for the purpose of facilitating labour, has been recommended by Paré, Mesnard, Coutouly, Lauverjat, Dubois, Kiwisch, Killan, Crede, and others, and it is done either with a probe-pointed bistoury, a uterostomatome (two scarificator blades), or long bent scissors. In the hands of a practised operator, the making of these incisions, under the above-mentioned conditions, does not involve any danger, and contributes greatly to rapid dilatation when the cervix is peculiarly rigid and indilatable. But when we consider the question of the necessity of this proceeding, it is, indeed, in very rare cases only to be justified, inasmuch as in the literature of the subject only very few observations are recorded in which the performance of hysterostomatoma was found to be indispensable, and that more on theoretical than practical grounds.

b. If the treatment of eclampsia is commenced at the beginning of the stage of dilatation, when the cervix has disappeared, but the os is still very contracted, or when the cervix and os are still contracted, and there are scarcely any signs of labour, as not unfrequently happens in cases of eclampsia with spontaneous coming on of premature labour, then, in regard to treatment, choice has to be made among these different plans; α. either exciting energetic pains to completely dilate the cervix and os uteri in a physiological manner; β. or by operative bloody interference to open up a way for the fetus through the lower segment of the uterus; γ. or to remain altogether passive until spontaneously supervening pains bring the labour to a termination, in cure or death of the mother or fetus.

α. The results produced by increase of the physiological activity of the pains, in cases of eclampsia, are so favourable to the preservation of the lives of both mother and child, that the acceleration of labour in the stage of dilatation is warmly defended and recommended by the author, Kiwisch, Litzmann, Grenser, Stoltz, Chailly,1 Crebé, and many others; opinions being divided only regarding the choice of the means to be used.

1 Chailly: L'Art. des Accouch. Paris 1853. P. 195.
According to my opinion, all the methodical rules which are in general suited for the most rapid bringing on of artificial premature labour, are here to be carefully considered.

Plugging the vagina with a caoutchouc bag has been very strongly recommended by me for attaining the above-mentioned object, after making numerous observations. In my proposal I have been very warmly supported by the opinions and experiments of Kiwisch, Holst, Wieger, Grenser, Simon Thomas, Schillinger, Litzmann, and many others; so that now, in a case of eclampsia, in the period of dilatation, where the pains are slow, it would scarcely be justifiable to abstain from making use of colpeurysis, and to proceed to *accouchemen forcéd* when the lower segment of the uterus is closed.

The rapid dilatation of the soft genital passages obtained in this manner is in many cases chiefly to be ascribed to colpeurysis, because, in the eclamptic or anaesthetic coma, a greater distension than usual of the caoutchouc bag is sometimes made use of, and because, after inducing strong pains, labour proceeds very rapidly, even after removal of the colpeuryniter.

The introduction and retention of an elastic catheter between the chorion and the walls of the body and fundus uteri, is a very simple, sure, and quickly operating means of inducing energetic pains; wherefore I must urgently recommend its use in eclampsia during the stage of dilatation.

It exerts this influence more rapidly than bursting the membranes and letting off the waters, and produces no injury. When there is evident danger to the life of the mother and fetus, I would recommend the simultaneous employment of colpeurysis and uterine catheterisation.

The tepid uterine douche has been highly recommended by Kiwisch, Holst, Grenser, Wieger, Simon Thomas, and Legroux, as a means of accelerating labour in the stage of dilatation. And there is no doubt that the douche, with a powerful jet of water, sometimes leads to results more rapidly in cases of eclampsia than in cases of contraction of the pelvis, in which even it has already happened that by one sitting labour has been induced and brought into full activity. Other methods of accelerating labour, as the use of secale cornutum, irritation of the nipples, carbolic acid douche, etc., are too uncertain in their action to admit of their being employed in a case of dangerous delivery.

In the most intense cases of eclampsia, good results have been observed from rupturing the membranes, by P. Dubois, Busch, Rul-Ogez, and others.

Waterhouse, Ashwell, Mitchell, and Villeneuve, consider energetic pains a very favourable event in eclampsia, and recommend the use of secale cornutum in order to accelerate delivery. But Kilian, Velpau, and Masson, have in the most earnest manner objected to this treatment, and, judging by our own experience, we must agree with them.

The second plan of treatment, to force the passage of the fetus through the soft genital passages by mechanical power, is deserted by accoucheurs of modern times, almost without exception.

When artificial delivery (*accouchemen forcéd*) is attempted by introducing the hand in a conical form through a narrow os uteri, and when the cervix is narrow or very little dilated, it is generally found to be altogether impossible, or if it sometimes leads to uterine ruptures dangerous to life; and thus the mother is subjected to greater dangers from the operation than from the eclampsia itself,

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1 Simon Thomas: *Nederl. Lancet*, 1853, und *Schmidt Jahrh.*, 1854. Nr. 12.
2 Schillinger: *Ungar. Zeit.,* V. 21. 1854.
3 Holst: *N. Z. f. Geburtsh.* Bd. 32. S. 85.
4 Busch: *Schmidt's Jahrh.* 1849.
5 Rul-Ogez: *Gas. Méd. de Paris.* 1852.
6 Kilian: *Geburtslehre.* 2 Bd. II. Thl.
7 Velpau: *Des convulsions chez 65 femmes,* Paris, 1834.
8 Masson: *Union Méd.* 1853.
of which no one can say whether any more paroxysms may come on and cause death.

But when the stage of dilatation is far advanced, when the cervix has completely disappeared, and the mouth of the womb opened from 1 to 2", forcible delivery is no longer necessary, because the dilatation of the fine border of the mouth of the womb is commonly easily accomplished with the fingers, and delivery goes on quickly and spontaneously, or it may without danger be easily accelerated. For these reasons, we must decidedly join with those who oppose resort to the accouchement forcé, as Böer,1 Betschler, Nagele, and others, have done.

The dilatation of the soft parts by incision, which has been recommended by Baudelocque, is without danger only when merely the external os uteri or the vaginal portion of the cervix are incised a few lines deep; it is very dangerous if the os uteri be very thick, or if the undilated part of the cervix still form a canal from ½ to 1" long, because then the incisions can no longer be exactly controlled, but penetrate too deeply; and the subsequent introduction of the hand, or extraction of the fetus, may produce uterine lesions dangerous to life, and under which the patient may sink, after she has recovered from the eclampsia. Hysterostomatomia should be confined to those cases only of eclampsia when there exists at the same time an organic stenosis of the external os uteri.

Our opinion, therefore, is, that forced delivery, with bloody or bloodless dilatation of the cervix, is never to be resorted to when any injury from it is to be feared; and we think the wise consideration of the success, from the above described methods of increasing the pains, affords sufficient reason to induce us to abstain from doing any harm either by rash officiousness or irresolute passiveness.

The commendation by Jörg2 of the accouchement forcé, in preference to artificially induced premature labour, has lately been called in question, in an excellent manner, by Krause, who rightly points out that the accouchement forcé is possible only when the os uteri is so far opened as at least completely to admit one finger, and when it feels to a certain degree pliable, and that, to reach this condition, artificial premature labour is pre-eminently applicable; so that the two methods by no means exclude one another, but each may be used at its proper time.

3 The third mode of treatment of the stage of dilatation in eclampsia consists, according to the examples of Baudelocque3 and Betschler,4 in carefully abstaining from all operative interference, and never undertaking anything which can be effected by nature herself.

Careful critical examination of statistical statements has already shown the injurious consequences of such passive conduct on the part of the physician, and therefore we do not feel called upon to enter upon further reasons of disapproval.

C. Treatment of eclampsia during pregnancy.

Eclampsia appearing in the second half of pregnancy has generally premature labour as a consequence; or, in exceptional cases, yields completely to medical treatment. Great attention is, therefore, to be paid to making an exact diagnosis of uræmic eclampsia, to the violence, frequency, and danger of the paroxysms, and to the results of the use of medicines; and artificial premature labour is to be resorted to only when there is some probability of the mother being thereby saved, and so much the more, if death of the fetus has already occurred.

1 Böer, L. J. : Aphorismen über Fräsen besonders bei Schwangeren und Gebärenden. Abh. Bd. II. 1807.
2 Jörg : Zwangsmittel gegen die Natur. Leipzig, 1852.
3 Baudelocque, A. C. : Sur les convulsions. Paris, 1822.
4 Betschler : Programm über die Eclampsie der Gebärenden. Breslau, 1831.
Colpeurysis and uterine catheterisation we consider, in this case, the most secure method.

If the agony comes on after a fit occurring during pregnancy, or the early part of labour, it is inadmissible to risk an accouchement forcé. In this case, it is much better to wait till the mother is dead, and thereupon to deliver the child by the Cesarean section.

D. Treatment of eclampsia in the stage of the after-birth.
The treatment of the stage of the after-birth, in cases of eclampsia, is to be conducted on general principles; only attention must be paid not to delay too long the careful removal of the placenta, in order quickly to procure most valuable rest to the patient.

E. Treatment of eclampsia in childbed.
Cases of eclampsia occurring in childbed are to be treated according to ordinary principles. Large doses of opium are, as a general rule, very useful at this time. But here, as at other times, we advise the greatest caution in resorting to phlebotomy, and would only make use of it if opium and cold affusions are without effect, and if cyanosis of the face and frequency of the pulse increase to a very alarming extent in a very strong constitution.

Regarding the influence of haemostasis (ligature of the extremities) in puerperal and childbed eclampsia, no observations are known to me. Since, according to Vogel’s calculation, a leg may, by this plan, be made to contain thirty ounces of blood more than is normal, a revulsion or derivation equivalent to that from a large venesection is obtained. I therefore feel myself bound to direct attention to the investigation of haemostasis in regard to its influence upon secondary hyperemias and cyanosis, which generally follow the most violent eclamptic attacks.

When a comatose condition comes on in childbed, we maintain the greatest quietness of the patient and of those around her, and take care that too bright light and all noise be avoided; we set aside all medicines, as well as cold applications to the head, and encourage abundant diaphoresis by covering the body well; for, at this period, more is to be feared from serious infiltration of the brain than from true hyperemia.

When the discharge of urine is scanty, the catheter is to be used, in order to avert retention and decomposition of urine in the bladder, resorption of carbonate of ammonia, and repeated outbreak of convulsive paroxysms.

When cholæmic eclampsia occurs, Bamberger recommends here also general blood-lettings, because, as in other similar cases of blood poisoning—for example, typhous, puerperal, alcoholic ureæmia, etc.—they aggravate the tendency to rapid collapse, to further dissolution of the blood, and to hemorrhage. Strong purgatives (calomel, senna, jalap, croton oil, irritating and purging elysiers) are most useful. When symptoms of depression prevail, then stimulating treatment is to be used to its fullest extent (cold affusion and douche on the head, embrocations of croton oil; internally, wine, ether, musk, camphor, and preparations of ammonia). On the other hand, if violent fever and symptoms of excitement prevail, then cold applications to the head, cold spongings, morphia, inhalation of chloroform, quinine, and mineral acids are to be used. All these means are, however, generally without any results, as well as the use of aconite, recommended by Ozanam as a specific.

Other convulsions resembling eclampsia—the apoplectic, cerebral, anæmic, toxic, and general spasms of typhus—are to be treated according to the general principles applicable when pregnancy has not existed, and also in cases of males. Obstetric interference in such cases must be decided on with great caution, in order not to increase the already existing danger to life.

Hysteric and epileptic convulsions do not generally require any treatment during pregnancy, because the use of medicines is generally without any results; and because it can never be justifiable to bring on artificial premature labour.
because notwithstanding suffering from these affections, if the mother enjoy otherwise good health, the development of the fetus is brought to completion, and because frequently, during childbed or after it, no improvement of these nervous affections is observed.

The chorea of pregnant women is not unfrequently connected with hydramia; hence preparations of iron are to be employed. Although it is known that after the completion of delivery the disease generally ceases, yet we do not consider that, in that circumstance, there is sufficient to indicate the induction of artificial premature labour, as the disease is not dangerous to the life of the mother.

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**Part Fourth.**

**MEDICAL NEWS.**

**THE MONTH.**

**MEDICAL REFORM.**—Short as the present session promises to be, this question is one on which a decisive deliverance may be expected before Parliament rises. Two bills are already before the House; both sufficiently known to the profession—Mr Headlam's, and one proposed by the late select committee of the House of Commons, and now re-introduced by Lord Elcho. The second reading of these bills, which was announced for May 20th, has been postponed till Thursday, June 4.

**SALE OF POISONS.**—An important measure "to restrict and regulate the sale of poisons," has been laid before the House of Lords, by Earl Granville, president of the Privy Council. Its provisions are of the most comprehensive character, not only including a long list of substances, the sale of which is regulated by the proposed Act, but also full details as to the penalties liable to be incurred by infringement, etc. Poisons are only to be had by persons of full age, in the presence of a witness, and on the production of a certificate, signed by the parish priest, medical practitioner, or justice of the peace. Due entries of all sales are to be made. Various precautions are enjoined as to the manner in which solid and liquid, coloured or colourless poisons are to be dispensed. They must be kept apart from other articles vended in the shop. The penalty for violating the Act will be a fine of £20 for the first, and £50 for every subsequent offence. Druggists will be disqualified from acting as such by second conviction. The Act neither affects regular medical prescriptions, nor trade sales.

**CHAIR OF MILITARY SURGERY.**—This professorship, vacant by the death of Sir George Ballingall, has at length been filled up by Government, by the appointment of Dr Matthews, a staff-surgeon of great experience. Dr Matthews served in the Crimea, and is reputed in the profession to be in every respect well qualified to perform the duties of the chair. Though comparatively unknown in Edinburgh, Dr Matthews may rely on a cordial reception.

**NATIONAL VACCINATION.**—We beg to direct attention to a recent circular issued by the Board of Supervision for the Poor on this subject, and which is ably commented on by a correspondent at page 1133.