

PROFESSOR CARL SIEGMUND FRANZ CREDÉ.

Carl Siegmund Franz Credé was born in Berlin on December 23rd, 1819. He died from carcinoma of the prostate at Leipzig on March 14th, 1892, at the age of seventy-two. His father, who came of a French emigrant family which had settled in Hesse, was a high official in the Ministry of Public Worship and Public Instruction in Berlin.

Credé began his medical studies in Berlin in 1838, and he took his medical degree there in 1842. He passed six months of his curriculum at Heidelberg, where he made

the acquaintance of Naegele. His Inaugural Dissertation was entitled "De Omphaloproptosi."

In 1843 he became Assistant in the Obstetric Clinic in Berlin, under the direction of Professor D. W. H. Busch, and he held the appointment until 1848. In 1850 he became a Privat-Dozent of Midwifery in Berlin. In 1852 he was appointed Director of the Berlin School for Midwives and of the Lying-in Department of the Charité Hospital. At his instigation a gynæcological clinic was established, and it was put under his charge.

In 1856 he was called to Leipzig to succeed Jörg as Professor of Midwifery. He also conducted the Klinik and Poliklinik which Professor Germann had established under Professor Jörg. Soon after he went to Leipzig he founded an Obstetrical Society in conjunction with Ploss and others.

In 1875 he was invited to succeed Eduard Martin in Berlin, but he declined on account of his age, then fifty-six years.

In 1887 failing health led to his resignation of his appointments.

In 1875, on his refusal of the call to Berlin, the Saxon Government conferred on him the Cross of Commander of the Order of Merit, 2nd Class.

In 1847 he married Fräulein Caecilie von Cebrow, and was permitted by Busch to reside outside the Lying-in Institution. He is survived by her and by three sons and five daughters.

He was renowned as a teacher, and beloved by his pupils, and he trained several of the most celebrated obstetricians of our time, including Ahlfeld, Fehling, Leopold, and Sänger. As a teacher he devoted himself chiefly to obstetrics, but as time went on he also paid much attention to the teaching of gynæcology. In the middle period of his professional life he undertook the major gynæcological operations, and he was noted for his dexterity as an operator.

In 1853 he joined with Busch, von Ritgen, and von

Siebold in founding and editing the 'Monatsschrift für Geburtskunde und Frauenkrankheiten.' When that periodical was discontinued at the end of 1869, he founded the 'Archiv für Gynaekologie,' and he continued to be one of the editors of it until his last illness. In August, 1881, when Spiegelberg died, Credé became sole editor, and he remained so for three years. He rendered signal service to obstetrics and gynaecology in founding and conducting those two periodicals. As Leopold says, he was a born editor. The following list of his writings is cut from a memorial address by his son-in-law Professor Leopold, published in the 'Archiv für Gynaekologie,' Band xlii, 1892, p. 211.

De omphaloproptosi. Inaugural-Dissertation. (1841.)

1. Klinische Vorträge über Geburtshülfe. I. Abtheilung. Berlin. (1853.)
2. Fall von Strangulation des Fötus durch achtfache Umschlingung um den Hals bei secundär syphilitischer Mutter. Monatsschrift für Geburtskunde, Bd. i. (1853.)
3. Klinische Vorträge über Geburtskunde. II Abtheilung. Berlin. (1854.)
4. Die preussischen Hebammen und ihre Stellung zum Staate und zur Geburtshülfe. Berlin. (1855.)
5. Bericht über die Vorgänge in der Gebärbtheilung der Charité zu Berlin während der vier Winterhalbjahre von 1852 bis 1856. Berlin. (1856.)
6. Zwei Fälle von künstlicher Frühgeburt nach den Cohen'schen Methode. Monatsschrift für Geburtshülfe, Bd. vii. (1856.)
7. Fall von blutiger Erweiterung des Muttermundes während der Geburt. Ebendas., Bd. vii. (1856.)
8. Einige Mittheilungen über Hæmatocele retrouterina. Ebendas., Bd. ix. (1857.)
9. Drei Fälle von künstlicher Frühgeburt nach der Cohen'schen Methode. Ebendas., Bd. xi. (1858.)
10. Vorfall des mit Fruchtwasser gefüllten Amnion. Ebendas., Bd. xiii. (1859.)
11. Ueber narbenähnliche Streifen in der Haut des Bauches, der Brüste und der Oberschenkel bei Schwangeren und Entbundenen. Ebendas., Bd. xiv. (1859.)
12. Bericht über die Vorgänge in der Königl. Sächsischen Entbindungsschule zu Leipzig seit ihrer Gründung am 5 Februar, 1810, bis zum 30 September, 1859. Ebendas., Bd. xv. (1860.)
13. Ueber die zweckmässigste Methode der Entfernung der Nachgeburt. Ebendas., Bd. xvii. (1861.)
14. Observationes nonnullæ de foetus situ inter graviditatem. Progr. ad memor. Bosii. Lips. (1862.)

15. Observationes de foetus situ inter graviditatem series ii. Progr. ad memor. Boaii. Lips. (1864.)
16. Fall von Acardiacus. Monatsschrift für Geburtshülfe, Bd. xxxiii. (1869.)
17. Eine Missbildung durch amniotische Fäden und Bänder. Ebendas., Bd. xxxiii. (1869.)
18. Beiträge zur Bestimmung der normalen Lage der gesunden Gebärmutter. Dieses Archiv, Bd. i. (1870.)
19. Kurze Mittheilung über Anwendung der Salicylsäure. Ebendas., Bd. v. (1873.)
20. Lehrbuch der Hebammenkunst in Verbindung mit Winckel. Leipzig. 1. Aufl. (1876.)
21. Die Verhütung der Augenentzündung der Neugeborenen. Dieses Archiv, Bd. xvii. (1881.)
22. Ueber die zweckmässigste Methode der Entfernung der Nachgeburt. Ebendas., Bd. xvii. (1881.)
23. Die Verhütung der Augenentzündung der Neugeborenen. Ebendas., Bd. xviii. (1881.)
24. Lehrbuch der Hebammenkunst in Verbindung mit Winckel. Leipzig. 3. Aufl. (1882.)
25. Zur Verhütung der Augenentzündung der Neugeborenen. Dieses Archiv, Bd. xxi. (1883.)
26. Die Behandlung des Nabels der Neugeborenen (Credé und Weber). Ebend., Bd. xxiii. (1884.)
27. Die Verhütung der Augenentzündung der Neugeborenen. Berlin. Hirschwald. (1884.)
28. Abwehr gegen Ahlfeld, "Berichte und Arbeiten aus der geburtshülflich-gynäkologischen Klinik zu Giessen 1881-82." Dieses Archiv, Bd. xxiii. (1884.)
29. Ueber Erwärmungsgeräte für frühgeborene und schwächliche kleine Kinder. Ebendas., Bd. xxiv. (1884.)
30. Ueber die Zweckmässigkeit der einseitigen seitlichen Incision beim Dammschutzverfahren (Credé und Colpe). Ebendas., Bd. xxiv. (1884.)
31. Ueber eine zweckmässige Binde für Frauen während der Menstruation und zur Stütze bei Scheiden- und Gebärmuttervorfällen. Ebendas., Bd. xxiv. (1884.)
32. Einige erläuternde Bemerkungen zu dem Berichte über: "80 Fälle von Kraniotomie aus der geburtshülflichen Klinik und Poliklinik in Halle a. S. von Dr. W. Thorn." Ebendas., Bd. xxiv. (1884.)
33. Einfache und leicht aseptisch zu erhaltende Stechbecken für Darmausleerungen und Abflussbecken für Ausspülungen. Ebendas., Bd. xxv; (1885.)
34. Die Anwendung der Zange bei nachfolgendem Kopfe. Ebendas. xxv. (1885.)
35. Lehrbuch der Hebammenkunst (in Verbindung mit Leopold). Leipzig. 4. Aufl. (1886.)
36. Gesunde und kranke Wöchnerinnen. Leipzig. (1886.)

37. Zwei weitere Fälle von Kaiserschnitt (Nr. 5 u. 6) nach Sanger's Methode. Dieses Archiv, Bd. xxviii. (1886.)
38. Fall von Kaiserschnitt (Nr. 7) nach Sanger's Methode. Ebendas., Bd. xxx. (1887.)
39. Weitere Erfahrungen ber gesunde und kranke Wochnerinnen. Ebendas., Bd. xxx. (1887.)
40. Die Behandlung der Nachgeburt bei regelmassigen Geburten. Ebendas., Bd. xxvii. (1888.)
41. Lehrbuch der Hebammenkunst (in Verbindung mit Leopold.) Leipzig. 5 Aufl. (1892.)
42. Die geburtshlfliche Untersuchung (in Verbindung mit Leopold). Leipzig. Hirtzel. (1892.)

His 'Klinische Vortrage ber Geburtshilfe' or Clinical Lectures on Midwifery is the only large work which he wrote, and it was never re-issued after its completion in 1854. It contains the substance of his obstetric teaching.

A much smaller work, his 'Gesunde und kranke Wochnerinnen,' published in 1886, gives the results of his life-long experience. Among various interesting sections of it may be specially mentioned those on febrile excitement resulting from mental disturbance, digestive disturbance, retention of milk, &c., and the chapter on the prophylaxis of septicæmia.

Credé's name will remain imperishably associated with two subjects, both of surpassing importance: the management of the third stage of labour, and the prevention of ophthalmia neonatorum and blindness.

It was in the first part of his 'Klinische Vortrage,' published in 1853, that he first promulgated his method of extruding the secundines. At pp. 599—601 he says that the simplest and most natural means of expediting the expulsion of the placenta is the excitement and the strengthening of the uterine contractions. In innumerable cases he had thus succeeded, without a single failure, in causing the expulsion of the placenta in from a quarter of an hour to half an hour after the birth of the child. He gently rubbed the fundus and body of the uterus through the abdominal wall, and he gradually increased the friction until he induced a strong contraction. When the contraction was at its height he grasped the uterus with

his whole hand, so that the fundus lay in the palm, and the body was surrounded by the thumb and the four fingers. He thus, with gentle pressure, expelled the placenta, which he always felt slip out of the uterus from under his fingers. Generally the placenta was extruded entirely from the passages, and, at the least, it came into the lower part of the vagina. At this period he still recommended that when the placenta lay in the vagina it should be extracted by pulling at the funis.

At the Conference of the Gynæcological Section of the Association of German Naturalists and Physicians in Königsberg on September 17th, 1860, as reported in the 'Monatsschrift für Geburtskunde und Frauenkrankheiten' for that year (Band xvi, p. 337), Credé described his method, which he said he had practised and taught for several years, as the method to be adopted in natural labours.

In the 'Monatsschrift' for 1861 (Band xvii, p. 274) he published an article, chiefly historical, "Ueber die zweckmässigste Methode der Entfernung der Nachgeburt." In that article he said that he now taught and practised his own method only.

In an article under the same title in the 'Archiv für Gynaekologie' for 1881, Band xvii, p. 260, he states that his method had been misunderstood by many, and that he expressed the placenta, not only from the uterus, but also from the vagina. Sometimes this was done at the acme of the first or of the second uterine contraction after the birth of the foetus, but generally at the acme of the third contraction.

He latterly modified his procedure somewhat, and in the 'Lehrbuch der Geburtshülfe für Hebammen,' 5th edition, 1892, p. 104, issued in conjunction with Leopold, it is recommended that the midwife should wait thirty minutes if there is no hæmorrhage, and then express the placenta. This is to be done by grasping the fundus uteri with the hand, the thumb being placed in front of the uterus and the four fingers behind it.

In the year 1878 I had the advantage of attending

Credé's clinic for a short time, and of seeing his practice and its results.

In order to form an estimate of the services of Credé it is necessary to take into account what had been previously done in the same direction. I must apologise to you for yielding to the temptation to speak first of the various phases through which the management of the third stage of labour passed before friction and pressure were practised.

The earliest method of dealing with the third stage of labour was probably that still followed in Old Calabar, as described in a paper which I heard read in the Edinburgh Obstetrical Society by the late Dr. Archibald Hewan in June, 1864. The paper was published in the 'Edinburgh Medical Journal' for September, 1864. The child is allowed to lie, with the funis uncut, between the thighs of the mother until the placenta comes away, however long that may be.

The inconveniences of such a practice were probably felt before long. At any rate, energetic measures betimes took the place of the previous inactivity.

In his 1255th Aphorism Hippocrates recommends the use of a sternutatory and stopping the nostrils and the mouth, in order to effect the expulsion of the secundines (*τὰ ὑστερα*). In the spurious Hippocratic Treatise 'Περὶ Ἐπικνήσιος' ('On Superfoetation') it is recommended that when the secundines (*τὸ χόριον*) do not readily follow the extraction of the foetus, the patient should be placed as if at stool, and that gradually increasing traction should be made on the funis by the weight of the child laid on a cushion of newly-carded wool, or on two leathern bottles (*ἀσκία*) connected together and filled with water, with the wool cushion for the foetus resting above them. Each bag or bottle was to be pierced with a style, so that the water might gradually escape.

Celsus ('De Arte Medicâ Libri Octo,' Liber Quintus, Caput xxv, 13) recommends a draught of water, to which sal ammoniac or Dittany of Crete has been added, for the purpose of expelling a dead foetus or the secundines.

Again, he recommends (*Liber Septimus, Caput xxix*, near the end of the chapter) that when a dead foetus has been extracted the physician should gently pull on the funis with his left hand, and that, guided by the funis, he should pass his right hand up to the secundines, which he should seize and bring away, along with any clots which might be present.

In his translation of *Paulus Ægineta* for the Sydenham Society (vol. ii, p. 393) the late Dr. Francis Adams says that Philumenus, Aëtius, Moschion, Avicenna, Albucasis, and Haly Abbas removed the placenta by introducing the hand into the uterus. *Paulus Ægineta* did the same, merely following Philumenus and Aëtius. Rhases recommended that when the secundines did not come away the patient should be made to sneeze; and that if they were still retained, the hand with the nails pared should be introduced into the uterus, and cautious traction made on the secundines. When they could not be removed in this way he advised that injections should be thrown into the womb, so as to promote their putrefaction. Soranus disapproved of all violent attempts at extraction, but advised the gentle introduction of the hand when all other means failed.

In early times it was generally thought that unless the secundines were immediately removed the os uteri would close, or that dangerous hæmorrhage would supervene.

Thus Ambrose Paré (*Les Oeuvres d'Ambroise Paré*, 5th edition, 1598, livre xxiv, chap. xvii, p. 936) says that immediately after the child is born the midwife is to pull out the placenta, and, if necessary, pass her hand into the uterus for the purpose. Otherwise the uterus and all the other parts would close directly. Sternutatories, fomentations, injections, and many other aids are recommended. It is only when the placenta has been extracted that the cord is to be tied and cut.

Mauriceau taught (*Traité des Maladies des Femmes grosses et de celles qui sont nouvellement accouchées*, 1683, p. 212) that directly the foetus was born, and before the funis was tied or cut, the placenta was to be pulled

out by tractions on the funis, the patient being made to assist by blowing strongly into one of her hands, closed, as if she were blowing into the mouth of a bottle; by putting one of her fingers into her throat as if to excite vomiting; or by straining as if at stool, or as if trying to expel another foetus. In this he was merely following the example of numerous primitive tribes, who use the same and similar expedients to the present day. If there was great difficulty Mauriceau advised that gentle pressure and friction should be made on the abdomen with the left hand. If this failed the hand was to be introduced into the uterus, and the placenta was to be separated and removed.

The immediate extraction of the placenta by the introduction of the hand was recommended by Portal (*'La Pratique des Accouchemens,'* 1685, p. 10); Dr. John Maubray (*'The Female Physician,'* 1724, p. 220); Deventer (*'Ars Obstetricandi,'* 1725, p. 216); Edmund Chapman (*'An Essay on the Improvement of Midwifery,'* 1733, p. 42); Sir Richard Manningham (*'Artis Obstetricariæ Compendium,'* 1739, p. 12); Heister (*'Institutiones Chirurgicæ,'* 1739, Pars Secunda, p. 1074); Dr. John Burton (*'An Essay towards a Complete New System of Midwifery,'* 1751, p. 126); Dr. Brudenell Exton (*'A New and General System of Midwifery,'* 2nd edition, 1752, p. 130); Dr. Thomas Cooper (*'A Compendium of Midwifery,'* 1766, p. 91), and by others. Some of the foregoing writers were specially urgent in their haste, as Maubray, who advised that with all imaginable speed the hand should be introduced and the placenta extracted; Chapman, who slipped his hand into the uterus the moment the child was born; and Exton, who introduced his hand into the uterus as soon as he possibly could. In fact, the immediate extraction of the secundines was the common practice until the middle of the eighteenth century.

The late Dr. Aveling discovered an indication of early English practice in a work of the fifteenth century, existing in manuscript among the Sloan MSS. in the British Museum. He published some notes of it in *'The Obstet-*

rical Journal of Great Britain and Ireland' for May 1874, under the title "An Account of the Earliest English Work on Midwifery and the Diseases of Women." It is stated that in cases of retained placenta "the mydwif shuld anynt her hondes and with hir nayles pullen owte the secundine if she mowe" (p. 83). The author seems to have been somewhat less rash than many later writers were.

One of the earliest to recommend a little patience was Jacques Guillemeau, the greatest of Paré's pupils and the translator of his works into Latin. In his treatise 'De l'Heureux Accouchement des Femmes,' 1609, p. 315, Guillemeau advises that the patient should be made to cough, blow and sneeze, and that if the placenta refused to come, the hand should be introduced into the uterus for its removal. He gives a caution against precipitancy, and he recommends patience for a little before proceeding to extraction.

Many years later Peu ('La Pratique des Accouchemens,' 1694, p. 192), discountenances precipitancy, violence, and unnecessary interference. "Festina lente" is the advice which he gives.

Vitus Riedlinus ('Lineæ Medicæ' Anni 1695, Mensis Aprilis, Dies xix and xx) shrewdly remarks that the expulsion of the placenta is often ascribed to drugs when it is the work of nature, and he says that there should be no haste in extracting it by the introduction of the hand.

The reaction against meddlesome interference in the third stage was encouraged by the writings of Ruysch who, in his 'Adversariorum Anatomico-Chirurgicorum Decas Secunda,' 1720, Caput x, argues that the placenta should be left until nature expels it, or at all events until it is detached and can be pulled out. It is in this Decas that Ruysch describes the supposed orbicular muscle of the fundus uteri, and bursts into the enthusiastic exclamation over the unique structure—"O admirabilem fabricam quâ instruxit hanc unam uteri partem Sapientissimus Creator."

De la Motte ('Traité Complet des Accouchemens,' 1721, p. 160) advised that the cord should be pulled and shaken

from side to side, and that if this did not succeed the patient should blow into her hand, strain as if at stool, and put her finger into her mouth as if she wished to make herself vomit. If the cord broke or the placenta still resisted he then introduced his hand into the uterus (pp. 727, 738).

Smellie ('A Treatise on the Theory and Practice of Midwifery,' 1752, p. 252, *et seq.*) also advocated patience in the management of the third stage. He recommended that the funis should be seized by the left hand and gently pulled from side to side, while the patient was desired to strain as if she were at stool, to blow forcibly into her hand, or to thrust her finger into her throat. If the placenta could not be brought away by these means, the hand was to be introduced into the vagina, or, if necessary, into the uterus. In the latter case pressure was to be exerted on the abdomen to keep down the uterus.

Benjamin Pugh should, perhaps, be included in the same category, as he tried tractions on the funis first, and, if they failed, introduced his hand into the uterus in ten minutes ('A Treatise of Midwifery,' 1754, p. 26).

Puzos ('Traité des Accouchemens,' 1759, pp. 141—154) gives a good account of the physiology of the third stage of labour. In the management of it he says he always prefers patience to precipitancy.

Levret ('Essai sur l'Abus des Regles Générales . . . des Accouchemens,' 1766, pp. 168—189) and Denman ('An Introduction to the Practice of Midwifery,' 1794, vol. i, p. 409) followed nearly the same practice as Smellie. Denman would allow the placenta to remain for an hour in the vagina before he pulled it out.

Some writers were so much struck with the difficulty or the imagined impossibility of manual extraction that they advised leaving the secundines in the uterus if they failed to come away spontaneously. Thus Eucharius Rhodion or Roesslin ('De Partu Hominis et quæ circa ipsum accidunt,' 1532, Caput vi), recommends various measures for the expulsion of a retained placenta, and if they fail, advises

that the placenta be left to come away of its own accord.

In the 'Byrth of mankynd, otherwise named the Woman's Boke,' by Thomas Raynald, Phisition, 1552, ff. lxxx to lxxxiii, the same advice is given. 'The Boke' is in fact a translation of Rhodion.

R. Rawlins, Surgeon, Oxford ('A Dissertation on the Structure of the Obstetric Forceps . . . together with Cautions, Remarks and Reflections on the Conduct and Management of Labors in general' 1793, p. 77), maintains that if no pains recur after the child is born, and the placenta cannot be touched with the finger, it must be left to nature.

Although but few obstetric writers recommend that the expulsion of the secundines should be left entirely to nature, it is clear from the numerous references to the practice that it must have been widely adopted at one time.

Many practitioners, without going so far as this, were content to wait four or six hours or longer before they proceeded to manual extraction. Mrs. Elizabeth Nihell, Professed Midwife ('A Treatise on the Art of Midwifery,' 1760, p. 305), speaks of a gentleman midwife leaving a patient after the birth of the foetus, intending to return next day to deliver her of the after-birth; and of ladies who commended the patience of certain gentlemen midwives who waited five, six, and seven hours by the clock before delivering the after-birth.

The practice of leaving the secundines in the uterus did not prove so dangerous as we might perhaps have expected, but it sometimes led to fatal results. William Perfect, Surgeon, of West Malling in Kent ('Cases in Midwifery,' vol. ii, 1783, p. 371, *et seq.*), Charles White, of Manchester ('A Treatise on the Management of Pregnant and Lying-in Women' 3rd edition, 1785, pp. 105, 307-10), and other writers report fatal cases.

White himself (p. 106) and many others after him laid great stress on leaving the expulsion of the foetus

entirely to nature, instead of extracting the body as soon as the head was born, as was commonly done.

Some even advised that, with the object of furthering the natural expulsion of the placenta, the birth of the foetus should be retarded mechanically. Dr. William Osborn ('Essays on the Practice of Midwifery in Natural and Difficult Labours,' 1792, p. 44), says that retention of the placenta may invariably be prevented by retarding or impeding the expulsion of the body after the birth of the head. Dr. John Clarke, of London ('Practical Essays on the Management of Pregnancy and Labour,' 1793, p. 23), Dr. John Power ('A Treatise on Midwifery,' 2nd edition, 1823, pp. 35 and 182), and others followed Osborn's practice, and spoke in similar terms of the advantages of it.

It is quite unknown at what epoch friction and external pressure were first used in the third stage of labour, but external pressure has no doubt been employed from a remote antiquity. It is in common use at the present day, often violent and ill directed, among many primitive tribes, as is amply shown in the following monographs:—
 "The Third Stage of Labour: An Ethnological Study," by Dr. George J. Engelmann ('The American Journal of Obstetrics,' April, 1881, p. 303); "Historisch-ethnographische Notizen zur Behandlung der Nachgeburtsperiode," by Dr. H. Ploss ('Beiträge zur Geburtshülfe, Gynäkologie und Pädiatrik' Leipzig, 1881, pp. 12—31); "Labor among Primitive Peoples," by Dr. George J. Engelmann (St. Louis, 1st edition, 1882, 3rd edition, 1884); "Notes on Labour in Central Africa," by Dr. Robert W. Felkin ('The Transactions of the Edinburgh Obstetrical Society' for 1883—84 pp. 28—36); "Midwifery among the Burmese," by Dr. T. F. Pedley ('Transactions of the Obstetrical Society of London' for 1887, p. 5).

In 'The Compleat Midwives Practice Enlarged a Work so plain that the weakest capacity may easily attain the knowledge of the whole Art' (2nd edition, 1659, p. 118), it is stated that if the patient is troubled with the "wind cholicks," "the Midwife ought to chafe the

woman's belly with her hand, which does not only break the wind, but causes the Secundine to come down." Although the work is in an English garb, the inspiration of it is French.

We have already seen that Mauriceau, in 1683, recommended slight pressure upon the abdomen and gentle friction, if bearing-down, sneezing, and such like aids failed.

Dionis ('*Traité General des Accouchemens*,' 1718, p.221), advises that while traction is being exerted on the cord light pressure should be made over the region of the uterus.

Heister ('*Institutiones Chirurgicæ*,' 1739, Pars Secunda, p. 1077), advised that when the funis was ruptured inside the passages, and the surgeon had introduced one hand into the uterus for the purpose of extracting the placenta, he should place his other hand on the abdomen, and gently compress the uterus with it.

Dr. John Harvie, Teacher of Midwifery in London ('*Practical Directions shewing a Method of preserving the Perinæum in Birth, and delivering the Placenta without Violence*,' 1767, p. 45) recommends the application of the hand to the patient's abdomen so as to feel the uterus, which is to be lightly pressed downwards or towards the pubes with the flat of the hand. The uterus, he says, will be felt to contract, and the placenta will be expelled from the passages, or at all events will be forced down into the lower part of the vagina. The hand is to be subsequently placed upon the abdomen, and any coagula present in the uterus expelled.

Dr. Robert Wallace Johnson ('*A New System of Midwifery*,' 1876, p. 200) directs that as soon as the child is born and the funis tied and divided, the patient should compress her abdomen with both her hands, pressing first on the epigastric, then on the umbilical, and finally on the hypogastric region. The doctor is to pull on the funis while the patient makes pressure upon the hypogastrium.

Charles White ('*A Treatise on the Management of Pregnant and Lying-in Women*,' 1773, p. 110), recommends traction on the funis in the third stage of labour, and adds

that "an easy pressure upon the abdomen by assisting the uterus to contract will be of service."

Baudelocque (*L'Art des Accouchemens*, 1871, p. 313) recommends friction on the hypogastric region in the third stage.

William Dease, Surgeon, of Dublin (*Observations in Midwifery*, 1783, p. 33) says, "Should the detachment of the placenta not be effected in the usual time, it will be much facilitated by the operator's judiciously applying his hand to the region of the uterus, which he may excite to the necessary contraction by gentle friction, and by introducing one or two fingers between the os uteri and the placenta, at the same time gently drawing and inclining the umbilical chord towards the sacrum."

Dr. David Spence (*A System of Midwifery*, 1784, p. 165) recommends that the belly be gently rubbed downwards, particularly where the uterus and the placenta are found, and that the woman be desired to press down easily, or to make attempts to sneeze or to slightly irritate the fauces.

Dr. Friedrich Benjamin Osiander (*Annalen der Entbindungs-Lehranstalt auf der Universität zu Göttingen vom Jahre 1800*, Göttingen, 1801, Band i. Introduction, p. 18) says that in the Göttingen Institution the after-birth was never removed by the introduction of the hand, but always by gentle manipulation of the uterus, and gentle traction on the navel-string made at the right time, that is when the placenta was felt by external examination to be detached. The placenta was generally expressed within a quarter of an hour after the birth of the child, and it seldom remained over half an hour. A year later, Osiander (*Grundriss der Entbindungskunst*, erster Theil, 1802, p. 301), after describing the extraction of the placenta by pulling on the funis in the direction of the axis of the pelvis says, "Often also, for the expulsion of the after-birth, there is nothing further necessary than compression of the fundus uteri, whereby the placenta comes out, and can be grasped with the hands held in front."

Dr. John Burns ('Practical Observations on the Uterine Hemorrhage, with Remarks on the Management of the Placenta,' 1807, p. 144) recommended the excitation of uterine action by making gentle pressure on the abdomen immediately after the birth of the foetus. When there was hæmorrhage he introduced his hand into the uterus to excite contraction, but he left the expulsion of the secundines to nature (pp. 145—146).

Capuron ('Cours Theorique et Pratique d'Accouchemens,' 1811, p. 318) advised that when it was suspected that the placenta was not completely separated, or when the uterus was soft, gentle friction should be made on the hypogastrium with the object of exciting the action of the abdominal muscles and of the uterus.

Dr. Joseph Clarke, who was appointed Master of the Dublin Lying-in Hospital in 1786, says ('Transactions of the Association of Fellows and Licentiates of the King's and Queen's College of Physicians in Ireland,' vol. i, 1817, p. 369), "I have been for some years in the habit, not only of retarding the expulsion of the foetus in these cases [where the uterus shows a tendency to imperfect action in expelling the foetus], but, with a hand on the abdomen, of pursuing the fundus uteri in its contractions until the foetus be entirely expelled, and afterwards of continuing this pressure, to keep it, if possible, in a contracted state. . . . Labours conducted in this manner will be less liable to be followed by retentions of the placenta, by uterine hæmorrhage, and by after-pains."

After this time pressure and friction came to be commonly employed, as by James Hamilton, of Edinburgh, Collins, of Dublin, Robert Lee, of London, Cazeaux, of Paris, and many others.

In Dr. Alfred H. McClintock and Dr. Samuel L. Hardy's 'Practical Observations on Midwifery,' 1848 (p. 221) Credé's method is closely approximated to, as a quotation will show:—"Having placed the hand on the fundus uteri, friction and slight pressure are to be made, and if the amount of contraction thereby induced be not sufficient

to repress the hæmorrhage, it will be necessary to expel the placenta from the cavity of the uterus. In doing this the organ must be grasped firmly, and pressure exerted upon it in the axis of the brim of the pelvis. If the uterus have fallen to the left side, as not uncommonly happens, it must be raised into its natural position before commencing to exert compression upon it. It will also tend much to the success of the manipulation if it be performed during the presence of uterine action. . . . These measures we have seldom found to fail in getting away the placenta unless it be morbidly adherent—or at least in bringing it to the os uteri within reach of the finger, which is almost the same thing, as its complete removal can then be effected at any moment without delay or difficulty." This method is not recommended by M'Clintock and Hardy in all cases, however, but only in those in which there is hæmorrhage between the birth of the child and the expulsion of the placenta.

A prolonged search would no doubt lead to the discovery of others of the earlier writers recommending external pressure.

Expression was sometimes practised so vigorously, even before Credé's publications, that inversion of the uterus resulted. A case of the kind is recorded in Sinclair and Johnston's 'Practical Midwifery,' 1858, p. 450.

While many medical writers thus recommended friction and pressure in the third stage of labour, and many uncivilised tribes have employed it from time immemorial, I believe that before Credé no one had described a method of expression so precise and effectual as his, or had insisted on the complete extrusion of the secundines from the maternal passages by manual pressure alone.

As soon as Credé's method became widely known, through his address at Königsberg in 1860, and his article in the 'Monatsschrift' in 1861, it was adopted by a great number of obstetricians. Already, however, not a few of those who at one time rigorously followed Credé's recommendations have returned to a more expectant treatment

of the third stage, and in particular have abandoned the practice of extruding the secundines from the vagina by pressure upon the abdomen.

Whether or not Credé's method will ever come to be generally practised in natural labour, it will always be a most valuable addition to our resources in cases of hæmorrhage and in delayed expulsion of the secundines.

The subject of ophthalmia neonatorum early attracted the attention of Credé. In his 'Klinische Vorträge über Geburtshülfe,' erste Abtheilung, 1853, p. 160, he says that acrid discharges in the passages of the mother are the most frequent cause of ophthalmo-blennorrhœa in the new-born child.

In the 'Archiv für Gynaekologie' for 1881 (Band xvii, p. 50), he published an article entitled "Die Verhütung der Augenentzündung der Neugeborenen." A second article followed in the same year (Band xviii, p. 367), and a third in 1883 (Band xxi, p. 179). He enlarged these articles and published them as a pamphlet in 1884, adding to the title the words "the most frequent and most important cause of blindness." He states that he first attempted to prevent ophthalmo-blennorrhœa in the infant, by treating all parturient women suffering from gonorrhœa or from chronic vaginal catarrh with repeated vaginal injections of warm water, or of solutions of carbolic or salicylic acid. Under this treatment ophthalmia became less frequent. In October, 1879, he made his first prophylactic experiments with eye-lotions, using a solution of borax of the strength of one in sixty. In December, 1879, he began the use of nitrate of silver, employing a solution of the strength of one in forty. On June 1st, 1880, he reduced the strength of the solution to one in fifty. The eyes of the children were washed with plain water immediately after their birth. Then the lids were gently separated, and a single drop of the silver solution was inserted between them. A glass rod was now used for the purpose instead of the syringe previously employed. For twenty-four hours the eyes were kept covered with

linen compresses soaked in a 2 per cent. salicylic solution. The vaginal injections were then given up.

The effects of the prophylactic treatment were immediately apparent. From the beginning of 1874 to May 31st, 1880, there had been 2266 children born. Of these 226, or just 10 per cent., were seized with ophthalmoblenorrhœa. From June 1st, 1880, to December 8th, 1880, there were 200 children born. Of these, one only was seized with eye-inflammation, and in that case the prophylactic instillation had been omitted.

In his second article in the 'Archiv' he stated that he had treated 300 children in a simpler way. As soon as the funis was cut the children were bathed, and their eyes were washed with a clean rag soaked in plain water. Then a drop of the 2 per cent. solution of nitrate of silver was introduced by means of a glass rod between the eyelids slightly opened. The further treatment with compresses was abandoned. Not one of the 300 children so treated suffered from ophthalmia neonatorum.

It is not surprising that results so brilliant, published in the 'Archiv' by an obstetrician of Credé's eminence and known accuracy of observation and of statement, speedily attracted the attention of leading members of the medical profession throughout the world, and led to a trial of his method on a great scale. It is well known that the treatment, wherever it has been practised, has been signally successful. The results during the first few years may be read in a paper on "The Prevention of Ophthalmia Neonatorum and of its Ravages," communicated to this Society in 1885 by Dr. David McKeown, of Manchester. Modifications have been made in the details by other obstetricians, but I believe that no plan has as yet been found so completely successful as Credé's own, although the solution used by him is perhaps unnecessarily strong.

In order to determine the credit due to Credé it is necessary to glance at the work previously done by others. It would be easy to multiply references, but a few will suffice.

Samuel Theodorus Quelmalz ('De Caecitate Infantum Fluoris Albi Materni ejusque virulenti pedissequa disserit,' 1750, p. 7), says that when the mother is suffering from fluor albus the discharge applied to the eyes of her recently born child may cause blindness. He speaks also of the foetus being affected while still *in utero*.

So far as I can ascertain, the first to give a distinct description of purulent ophthalmia neonatorum was Joseph Warner, F.R.S., Senior Surgeon to Guy's Hospital. In his treatise, 'A Description of the Human Eye and its Adjacent Parts, together with their Principal Diseases and the Methods proposed for relieving them,' 1773 (p. 41), he describes the disease well, and says that he has often been consulted in cases of it, that it appears very alarming, and that if neglected it sometimes results in total blindness. Timely treatment, he says, is generally successful.

Warner was followed by James Ware, F.R.S., who, in his 'Remarks on the Ophthalmia, Psorophthalmia, and Purulent Eye,' 1780, has a chapter "Of the Purulent Eyes of New-born Children." In his 'Remarks on the Purulent Ophthalmia which has lately been Epidemical in this Country,' 1808 (p. 10), Ware notices the fact that "some of the worst cases of this disorder that have occurred in infants have happened in those whose mothers were subject to an acrimonious discharge from the vagina at the time the infants were born."

Johannes Godofr. Goetz ('Ophthalmia Infantum recens natorum,' *Dissertatio Inauguralis*, 1791, p. 13) says that venereal blennorrhagia and ulcers of the vagina existing at the time of labour can cause ophthalmia neonatorum.

C. G. Selle ('*Medicina Clinica*,' 6th edition, 1793, p. 395) gives various causes of ophthalmia neonatorum, and amongst them the lochia applied to the eyes of the child.

Dr. Ph. Fr. Walther ('*Abhandlungen aus dem Gebiete der practischen Medicin, besonders der Chirurgie und Augenheilkunde*,' 1810, vol. i, p. 449) speaks of fluor albus of the mother as a cause of ophthalmia neonatorum.

Professor G. Joseph Beer, of Vienna ('*Lehre von den*

'Augenkrankheiten,' vol. i, 1813, p. 70), says that ophthalmia neonatorum can cause blindness.

In his "Trattato delle principali malattie degli occhi," vol. i, 1816 (pp. 205—208), Scarpa speaks of purulent ophthalmia of the new-born child arising from leucorrhœa in the mother. He advises that the vagina should be syringed before parturition, and that the edges and the inner surfaces of the eyelids should for several days be carefully washed with decoction of mallow.

Dr. William Mackenzie in 'A Practical Treatise on the Diseases of the Eye,' 1830 (p. 360), says, "We have reason to believe that this disease is, in general, an inoculation of the conjunctiva by leucorrhœal fluid during parturition, and that, therefore, it may be prevented in almost all cases by carefully washing the eyes of the infant with tepid water as soon as it is removed from the mother." In the 4th edition, 1854 (p. 466), he further suggests the repeated injection of tepid water or of a weak alkaline solution into the vagina in the first and second stages of parturition.

In his 'Treatise on the Diseases of the Eye,' 1833, (p. 171), Sir William Lawrence says, "In a great proportion of cases there is vaginal discharge from the mother, leucorrhœa and sometimes gonorrhœa." He also remarks on the violence of the inflammation, and on the serious consequences to which it rapidly leads (p. 171).

In the 'Cyclopædia of Practical Medicine' edited by Drs. Forbes, Tweedie, and Conolly, vol. iii, 1834, Dr. Arthur Jacob, speaking of the purulent ophthalmia of infants says, "This is a most formidable disease; indeed, it is probable that the loss of vision from this cause is four times greater than that from all the cases of common purulent and gonorrhœal ophthalmia put together" (p. 216). As to the cause, Dr. Jacob remarks that in the majority of cases the mother labours under either leucorrhœa or gonorrhœa (p. 217). As a preventive he recommends that "a sponge and basin of warm water be ready to cleanse the face and eyes of the infant imme-

diately after birth, and, if possible, before the lids are opened" (p. 218).

Dr. H. Abegg states in the 'Archiv für Gynaecologie' for 1881, Band xvii (p. 502) that in the Lying-in Institution for the Instruction of Midwives at Danzig, he had for several years had the children's eyes washed with pure water immediately after their birth. The result was that in the ten years from 1871 to 1880 inclusive there had been but sixty-six cases of eye inflammation among 2266 children, or less than 3 per cent. In almost all the cases of ophthalmia one eye only was affected. It is not stated what the proportion of cases of ophthalmia had been previously.

It appears then that Credé was not the first to point out the prevailing cause of purulent ophthalmia neonatorum, nor the frequency with which such ophthalmia results in blindness, nor simple preventive measures. But it was he who devised the most effectual means of prevention yet known, and it was he alone who opened the eyes of the medical profession to the momentous importance of the subject. Except the introduction of vaccination by Jenner, nothing greater has ever been done for the prevention of blindness in children.

The chief interest of these historical inquiries lies in their illustrating the fact that, as a rule, useful discoveries are the product of the activity of many minds, and arise by a gradual process of growth and development, instead of springing by a sudden inspiration from the brain of some scientific Zeus like a fully armed Athena.

IN MEMORIAM.

CARL SIEGMUND FRANZ CREDÉ.

BORN AT BERLIN, DECEMBER 23D, 1819; DIED AT LEIPZIG, MARCH 14TH, 1892.

IN rapid succession death depletes the ranks of those who have taken an active part in the wonderful development of the medical art in the last thirty years. One of the most renowned members of the medical profession, a man with whose name are associated brilliant achievements and success, has ceased to be. To the whole medical world, to his many pupils and friends, the death of Credé will cause sincere regret and sorrow.

Born in Berlin, December 23d, 1819, he obtained his medical education at the universities of Berlin and Heidelberg, receiving his doctorate in medicine from the University of Berlin in 1842. After continuing his studies for a few years in foreign countries, he returned to Berlin to become the assistant of Busch in the Berlin Maternity. This position he occupied for five years. In 1850 he became "privat docent" in obstetrics, and in 1852, when only 33 years old, he was appointed director of the Berlin School for Midwives and physician-in-chief of the lying-in division of the Charité.

In 1856 he accepted a call to Leipzig, where for thirty-two years he was professor of obstetrics and gynecology and the director of the Maternity Hospital connected with the university.

He devoted himself mainly to the specialty of obstetrics, always maintaining that the practice of gynecology would become less important in proportion to the improvements in the field of obstetrics.

Credé was one of the ablest academical teachers in Germany. Numerous students have listened to his teachings, carrying away treasures of wisdom. Many now celebrated in their vocation, such as Fehling, Ahlfeld, Leopold, and Sänger, have received their training under his guidance.

In 1887 prolonged invalidism compelled him to resign his many and arduous duties; but even then he did not rest, but devoted himself to editing the *Archiv für Gynäkologie*, of which he was the founder.

Credé's teachings bear the stamp of a genius; they have to-day the same vitality and force as when they were first published.

"Credé's method of expressing the placenta" has a world-wide reputation. It was made public in 1853 in his "Clinical Lectures on Obstetrics." At the present time, when the dangers accompanying the introduction of the hand into the vagina and uterus are more and more appreciated, the importance of a method which accomplishes the delivery of the placenta by external pressure, instead of pulling upon the cord or manual detachment as formerly employed, can better be understood.

Credé's prophylaxis of ophthalmia neonatorum has pre-

served the eyesight of thousands of infants. It has caused a marked decrease of the cases of so-called "congenital blindness"—a decrease found not alone in lying-in hospitals, but also noticed in the institutions for the blind. Before the investigations of Credé ophthalmia neonatorum was the most frequent cause of blindness.

His work, "Healthy and Sick Puerpera," is a most valuable contribution to the management of labor and of the puerperium. He advocates conservatism and prophylaxis instead of undue interference. He criticises the indiscriminate use of vaginal examinations during labor, and pleads for the employment of abdominal palpation whenever this is possible.

Together with Prof. Leopold, his son-in-law, he wrote an obstetrical text book for the use of midwives, of which a fifth edition has lately been published; and many are the monographs and papers which have appeared over his name.

The history of Credé's life is that of a man of great mental powers. His character was full of energy, and he at all times kept before his mind's eye the object which was to be attained.

The work which he has accomplished is permanent and will benefit many generations. His name will be added to those of Levret, Smellie, Hunter, Baer, Stein, Osiander, and Ritgen in the illustrious gallery of famous obstetricians.

Many owe to him life and health; many will cherish his name as that of a great teacher to whom they owe much of what they are. His teachings will continue in his works, and the medical art and science will keep his memory alive until history ceases to be.

JULIUS ROSENBERG.

