else. Narcotic and other poisons may be taken in gradually increasing doses until an amount many times a poisonous dose, in the first instance, is readily tolerated. This means nothing more than that a resistance against that special form of poisoning has been established. Experiments of this kind have no value in serum therapy. It is quite likely that one might begin with a very small dose of some disease toxin, like that of tuberculosis or diphtheria, and by gradually increasing the amount exhibited, a resistance would be established which would make the injection of large quantities of the poison possible, but this is not immunity. The resistance would be speedily lost with the withdrawal of the poison, while a true immunity would persist for a longer or shorter time or permanently. The work of Calmette in establishing a resistance to snake poison is classed with serum therapy by some, but as a matter of fact it has nothing to do with serum therapy, unless it can be shown that these inoculations actually produce an antitoxin which renders the subject immune for a considerable time after the inoculations have ceased.

Referring again to the use of immunized horse serum for the treatment of tuberculosis and the favorable results reported, it is quite probable that all the benefits received by the patients subjected to the treatment were due to the serum itself and not to any added value it possessed by reason of the animal having been inoculated with tubercle poison. A Spanish physician, in Barcelona, reports good results from the injection of plain serum in cases of faulty nutrition in children. Indeed, the results reported are quite beyond belief. Its exhibition was followed promptly by an increase of the number of red corpuscles and a gain in weight. He also reported the cure of sixteen cases of chorea in an average of fifteen days, with the serum.

In conclusion it would seem, in the light of our present knowledge, that serum therapy is of value only in those diseases in which it produces an antitoxin and that an antitoxin is produced only in the self-limited diseases.

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PROLONGED GESTATION, ACRANIA MONSTROSITY AND APPARENT PLACENTA PREVIA IN ONE OBSTETRICAL CASE.

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The following case, on account of its unique character, will probably be of interest:

About the middle of April, 1897, Mrs. F., 4-para, age 34, engaged me to attend her in confinement which was expected about July 1, 1897. When questioned, she told me her last menstruation occurred September 4, 1896, but did not indulge in sexual intercourse until two days before her next expected menstrual period, or September 30, and that she had not copulated for two months before this period and not at all afterward. Accepting these statements as facts, she should have fallen in labor about July 6, 1897. On June 20, I was summoned to her on account of a "severe period" coming on. Upon arriving at her home and making careful inquiry, I was told that two months before she had passed considerable blood and each time there was very little pain. A vaginal examination showed cervical dilatation to be practically *nil* and hemorrhage decided. Taking everything into consideration, it was decided to be a case of placenta previa. After concluding to dilate and deliver at once, the patient was ordered absolute rest, foot of bed ele-

vated, cool drinks, etc., until an assistant could be procured. The patient when informed of what was proposed to be done strenuously objected and argued that she recovered all right from the attack of bleeding she had two months before and preferred to wait and see if she did not recover from this one. All my persuasion and instructions regarding the dangers of such a course were in vain. The next day when I called the patient was up and walking around the house as though nothing had happened. She was informed that she should send for me at once when the first evidence of her falling in labor occurred as it was then almost due. Nothing more was heard from her until Aug. 5, 1897, when the messenger announced that Mrs. F. had fallen in labor. Upon arriving at the patient's bedside and after thoroughly sterilizing my hands and arms, investigation showed labor well advanced with normal implantation of the placenta. To my surprise and relief, practically no blood was lost before or after delivery, but the child proved to be a monstrosity of the acrania variety. (For an almost exact picture of the monstrosity see cut on page 97 of "J. Lewis Smith's Diseases of Children" 7th Edition.) The vascular exposed mass looked as though it had been bleeding and had been partly covered by a very thin membrane. Probably less than one-half of the brain matter was present. In other words, if a plane had been passed from a point one-half inch above the supra-orbital ridges to the occipital protuberance it would cut off about as much of the brain matter as was absent in the child under consideration. The baby nursed naturally after the first day, but succumbed on the third day.

The first thing to engage our attention is the apparent prolonged period of gestation which, if the woman was not mistaken, was 305 days. We appreciate the fact that all histories regarding time of supposed conception must be accepted with considerable doubt, but, after questioning and requestioning the woman she would invariably tell me she absolutely knew there was no mistake. Inasmuch as several cases have been reported, from perfectly reliable sources, of much longer periods of gestation than this I simply bring out this feature of the case on account of the history seemingly being genuine. In one case, reported by Maur, gestation was believed to have lasted 334 days.

It is quite interesting to read the history of the theories as to the causes of these teratologic objects before the causes were analyzed and considered, from a scientific standpoint. Ambroise Paré,¹ says, "therefore, in times past there have been some, who nothing fearing the Diety, neither Law nor themselves, that is their souls, have so objected and prostrated themselves, that they have thought themselves nothing different from beasts: wherefore atheists, Sodomites, outlaws, forgetful of their own excellency and divinity, and transformed by filthy lust, have not doubted to have filthy and abominable copulation with beasts. This so great, so horrid a crime, for whose expiation all the fires in the world are not sufficient, though they too maliciously crafty have concealed, and the conscious beasts could not utter, yet the generated misshapen issue hath abundantly spoken and declared, by the unspeakable power of God, the revenger and punisher of such impious and horrible actions. For of this various and promiscuous confusion of seeds of different kinds, monsters have been generated and borne, who have been partly men and partly beasts." But it seems the real foundation for the scientific consideration of the subject was laid by Albrecht von Haller. His intelligent and scientific mind enabled him to analyze all the previous theories and make logical deductions. It appears that Bichat, the originator of the science of histology took up the subject where Haller left off. Through his efforts the subject of the study of monstrosities became identified with embryology. We believe now, as was

¹ Ambroise Paré: Surgery, 1579. Johnson's Trans., London, 1634, Book xxv, "Monstrosities and Prodigies."

believed in Bichat's days, that monsters resulting from retardation or arrest of development are partly permanent embryos. Without going deeply into the various theories, it seems the effect of maternal impressions in producing monstrosities is little when we consider that, as yet, not a malformation has been found that is peculiar to the human species. Ballantyne,² in his recent work, expresses his opinion that a definite impression upon a pregnant woman's mind never causes a defect in the fetus closely resembling the thing producing the impression, but he does say that the state of a woman's mind during gestation does have more or less effect upon the unborn infant's development and that the cases which have been advanced to prove effect of maternal impressions have been coincidences rather than the effects of alleged causes. External mechanical influences may act partly or wholly as the cause in some cases, but the most logical explanation is pathologic influences analogous to those which occasion morbid conditions in the body after birth. However, probably in every monstrosity numerous conditions have operated to bring about the anomaly.

That there was an abnormal implantation of the placenta in this patient's uterus, almost any physician would have thought and would have expected alarming hemorrhages at or before birth. The patient being a multipara, the previous nearly painless hemorrhages, etc., seemed to foretell that. This must have been simply a case of menstruation during pregnancy, or a metrorrhagia. Hemorrhages, however, unless caused by a vicious situation of the placenta, are very rare so late in pregnancy unless there has been menstruation during the entire gestation.

DENTAL FACULTIES IN MEDICAL SCHOOLS.

Presented in the Section on Stomatology, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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There is a sentiment abroad that some dental schools have not the equipment of faculties and instructors that they should have. It is a prerequisite for admission to the National Association of Dental Faculties, that the applicant shall have the endorsement of the board of dental examiners of the State in which it is located; and it is the rule of the National Association of Dental Examiners that an application for recognition by that body must come from a member of the Association of Dental Faculties.

"Dental schools are not being formed now from an educational necessity. Two impulses control this matter: 1, personal ambition to have a position in and be connected with a dental school, for the prominence it is supposed to give; and 2, a purely commercial spirit on the part of medical schools. Over 60 per cent. of our schools are appendages to medical institutions; and nearly every dental school started in these later years has been under this outside influence."

The Committee on Colleges of the National Association of Dental Examiners, recently expressed the view that more should be required to establish the right of dental schools to recognition than the fulfill-

ment of the rules of the Association of Dental Faculties; evidence should be furnished that the teachers are of high standing, and that they and the school have the confidence of the local members of the profession. The committee also called attention to the impropriety of schools advertising as instructors, practitioners who occasionally hold a clinic before the students, but are not a part of the staff of the institution.

While "anybody with fair mechanical ability could pull or fill a tooth, I have seen good fillings inserted in teeth by a man wholly ignorant of the science of dentistry, and we have all seen the botches which educated men have made in attempting a similar operation," yet (in the words of an editorial in the *Dental Cosmos*), "the ability to teach dentistry is an acquisition quite distinct from, though supplemental to, the ability to practice it. So important has the art of teaching become that the study and investigation of its principles now constitute a distinct branch of scientific work, viz., pedagogics. To know dentistry from the point of view of the practitioner is one thing. To know it from the teacher's standpoint implies not only all that is included in the educational equipment of the practitioner, but in addition to this the important qualification of ability to impart successfully this knowledge to others."

The plan of requirements of dental schools, hereafter making application for recognition by the National Association of Dental Examiners, provides that each dental school must have a teaching faculty of at least three professors of dental subjects, namely: for operative dentistry, for dental prosthesis, and for dental pathology and therapeutics; and at least five professors for medical subjects, namely, for anatomy, physiology, chemistry, pathology and for materia medica.

Let us consider one thought in the discussion of "the equipment of faculties and instructors." In none of the dental departments of the medical schools known to us is there, in the teaching faculty, a professor for "dental pathology and therapeutics." The title used by faculties is "M.D., professor of materia medica and therapeutics," as certified to by official documents. Now, we maintain that more than a medical education (so-called) is requisite to teach dental therapeutics. The therapeutics of dentistry, unlike its anatomy, physiology and pathology, differs from that taught in the medical schools. It is medical, surgical and prosthetic. In so far as it is a direction of medical science to the prevention, modification or removal, by medicinal or hygienic remedies, of the causes and effects of disease in the dental organs, it forms part of a physician's practice, just as does the treatment of cerebral, cardiac or pulmonary disease. In so far as it is an application of surgical skill to the extraction of teeth, to the removal of tumors, to the treatment of fractures or of fissured palate, it is simply oral surgery, involving only such knowledge and skill in the use of instruments as every surgeon must possess. But dental therapeutics includes a class of operations which medical men were not taught in medical schools, and which as physicians and surgeons they do not practice. The prevailing and distinguishing feature of dental therapeutics is the art of replacement; replacement of dental structure in such manner and with such material as shall prevent further action of the destructive agencies; replacement of dental organs by substitutes which shall

² Teratogenesis: An inquiry into the causes of monstrosities. History of the Theories of the Past, J. W. Ballantyne, M.D.