which have been advanced for the origin of the erythroblast, the last is undoubtedly supported by the best histological evidence.

As the question of the origin of the red corpuscles of the adult now stands, there are only two theories which can claim to be at all established, Schäfer's Vasoformative theory and the Erythroblast theory. Unfortunately the former is active only a short time after birth, so that it cannot be given as a sufficient explanation. The erythroblast theory rests on excellent evidence, is a sufficient explanation, but unfortunately exists in so many variations that many are disposed to doubt its truthfulness altogether. Whoever will undertake, however, to run over all the many theories from Neumann's time to the present day, can hardly fail to see that, although stated in so many forms, they yet reduce to one, which in brief seems to be as follows: An indifferent marrow-cell with its granular protoplasm, nucleus and one or more nucleoli, by a series of cell-divisions, develops into a nucleated colorless cell, which by an amoeboid motion makes its way into the lumen of a venous capillary. Here it acquires hæmoglobin, and passes through a series of changes fitting it for the loss of its nucleus which takes place by extrusion. After the loss of the nucleus, the plastid, no longer a true cell, collapses, and is transformed into a biconcave disc or red blood-corpuscle, which passes out of the marrow-cavity into general circulation.

Clinical Department.

A CASE OF IMPERFORATE RECTUM.

BY W. M. CONANT, M.D.

WHEN making the visit Sunday, May 31, 1891, at the Massachusetts General Hospital, for Dr. Homans, I found a male babe, three days old, that had passed no fæces since birth. The child had vomited frequently. The urine was passed freely, clear, and not tinged with meconium. Temperature at time of entrance 100°, pulse 100.

Examination showed the child to be much jaundiced. General condition fair, with pulse of good strength. Abdomen much distended, so that the veins could easily be seen. No anus present, not even a dimple to mark the accustomed spot. A doubtful impulse was felt in region of anus on pressure upon the abdomen.

The child was seen in consultation by Drs. Beach and Mixer, and it was decided best to operate.

Operation, under ether. Drs. Beach, Mixer and A. Coolidge, Jr., present. An incision was made from the middle of the perineum to tip of coccyx, and was carried to the depth of one and a half inches. Even then there was no impulse to be felt either by Dr. Beach or myself. A small trocar was plunged into the region of the rectum, but nothing was obtained. It was decided that it was not wise to deepen the incision, and on consultation it was thought best to do a laparotomy.

An incision two and a half inches long was made in the left linea semilunaris. Some ascitic fluid was found on opening the abdominal cavity. On inserting the finger the distended bowel was detected, extending toward the perineal incision. It seemed to be about a quarter of an inch from the perineal incision, and sep-

arated from it by a diaphragmatic membrane which shut off the abdominal from the pelvic cavity. Then it occurred to me that it might be possible to pass a trocar through the perineal wound into the gut. This I was able to do by using one finger in the abdominal cavity as a guide. The point of the trocar held in the other hand was directed as far back as possible and then entered the bowel from behind without opening the peritoneal cavity. A good-sized trocar was passed into the gut, and five ounces of meconium passed through the canula. The abdominal wound was closed with silk sutures. The canula was left in perineal wound, being fastened in with adhesive plaster. The child stood the operation well, and slept in the afternoon. He took and retained milk and water when awake. Fæces passed readily through the canula, and the child was very comfortable in the evening.

Through the kindness of Drs. Homans and Cabot, I was permitted to have the subsequent care of the case.

June 4th, three days after the operation, the canula was removed and a rubber tube fastened into the wound.

June 15th, two weeks after the operation, the child had gained a pound in weight, now weighs seven pounds. Abdominal wound healed.

June 30th. Several times in last two weeks the anus has been dilated, and to day a fresh tube was inserted. Weighs seven pounds. The abdomen bulges a little at cicatrix, due to the thinning of the entire abdominal wall.

July 15th, six weeks after the operation, child still weighs seven pounds. Food does not agree with him at this time.

July 31st. Anus stretched and a mass of fæcal impaction dug out. Has lost one pound in weight. Several different foods were tried, and it was found that half barley-water and milk agreed best with the child.

The child remained in this condition, sometimes losing, sometimes gaining, in weight, until the last of August, and then, during a few days of extreme heat, he had an attack of entero-colitis, and died.

The entire subject cannot be covered in a paper of this character, but a consideration of the more important points may be of value.

In the embryo a cloaca exists until after the fifth week, and the genital eminence makes its appearance in the course of the sixth week in front of, and within, the cloaca. In the seventh week this is divided into two parts, just how this takes place is not known. The process is connected with the formation of the urogenital cord as an independent structure, and results in the division of the cloaca into a dorsal or anal, and a ventral part. In the tenth week a transverse integumental band completes the division. Of the two openings the dorsal one or anus is of small size and is surrounded by a small, circular, integumental ridge.

It follows, therefore, that there may be several different forms of imperforate rectum or anus, namely:

- (1) The anus may be partially closed.
- (2) The anus may be completely closed.
- (3) The anus is closed, but there is an opening into bladder, urethra or vagina.
- (4) Anus and rectum imperforate.
- (5) Anus in natural position, but rectum wanting for a short or long distance.

The anatomy of the rectum of the infant has been but little studied judging from the small amount of literature on the subject. I have measured a few babes

at term at the Harvard Medical School, and have found the antero-posterior and lateral diameter, from the tip of the coccyx to symphysis on each, about an inch. The distance from the anus to the brim of the true pelvis is a little less than two inches. One interesting thing that I noticed was that about two inches up the rectal wall there was a sharp falciform edge felt as if the rectum was flexed at that point. This I have also felt on several babes a few months old. How much weight, if any, ought to be attached to this point I am unable to state.

The prognosis of these cases, except the simplest forms, is very unfavorable.

Cripps has tabulated one hundred cases of Littré's operation with five recoveries.

Holmes claims not to have met with an account of any permanently successful cases since the publication of Rochard's paper.

Geraldes, after thirty trials, had one successful case, and that died at two and a half months.

Guersant opened the colon in the groin eleven times and once in the loin, without saving a single patient.

Inflammation, visceral complications, dilatation of the bowel above with retained ingesta, insufficient assimilation and pain render a favorable result very improbable.

Treatment.—All operators agree that the indications are to establish an opening as near the natural position of the anus as possible.

The first two forms, where the anus is partially or completely closed, are easily treated by breaking down the membrane and keeping the gut patent by occasionally inserting the finger.

In the third form, where there is a fistula, several things have to be considered. Where there is a recto-vaginal fistula, the size of the child and the urgency of the case have to be considered. Most operators advise waiting until the child is several years old. When the fistula empties into the urethra or bladder, the amount of rectum wanting and the height of the communication are important points. Where there is bulging at the anus the communication is probably recto-urethral, and an attempt may be made to find the bowel. If the bowel cannot be found, Littré's operation is advised by most operators.

In the fourth and fifth forms, where, with anus perforate or imperforate, the rectum is deficient, we have the most difficult problems to solve. In these cases Jacobson mentions four points that should be remembered: (1) Rectum may end at brim of pelvis. (2) If the rectum ends lower down, it may be floating with a long meso-rectum. (3) Though the rectum may end within reach, the peritoneum may, and not unfrequently does, extend low down on the bowel. (4) Even if the rectum is successfully opened high up without opening the peritoneum, fatal cellulitis may be set up by the escaping feces, or by the attempts to keep the bowels patent.

Nearly all operators advise an exploratory incision in the site of the anus, and some advise carrying this to the depth of two inches; this is the extreme limit. The majority advise an inch or an inch and a half. At this depth a small trocar or aspirating needle is advised to be inserted well toward the back: failing in this, they advise Verneuil's operation, namely, excising the coccyx, inguinal colotomy, lumbar colotomy, Littré's operation.

Verneuil's operation has been performed but seldom,

but in certain cases it seems of promise. Lumbar colotomy is not often done at present as inguinal colotomy or Littré's operation is preferred.

After having found the gut by Littré's operation, it is an interesting question to decide whether an opening should be made through the perineum. The authorities differ, but the consensus of opinion is against doing so, because it is not certainly known where the gut is or whether it is covered with peritoneum. This may be true in the usual methods of operating, but in the case just reported the end of the gut could have been found wherever it was; and the ability to direct the trocar toward the back of the pelvis was very marked. Certainly, this method enables one to know just what one is doing.

This is the first case, as far as I can learn, that has had a laparotomy performed, and then had a connection made between the gut and the perineal wound without opening the intestines from above. Certainly one case does not prove anything, but the unfavorable condition of the child before the operation, and the great relief and slight shock from the operation, has led me to report this method of operating in severe cases of imperforate rectum and anus.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON.

(Continued from No. 11, page 266.)

PIGMENTATION OF MUCOUS MEMBRANES IN "VAGABOND'S DISEASE."⁴

PIGMENTED spots of the mucous membrane are generally considered a characteristic and even pathognomonic sign of Addison's disease. In a case of generalized pigmentation their absence is almost enough to warrant us in eliminating Addison's disease. While these diagnostic deductions are true in the immense majority of instances, the two cases reported by Thibierge, show that some modification in our statement of them is necessary. The first case was that of a man fifty-nine years old, who had fallen from a respectable position, into habits of confirmed vagabondage. A discoloration of the skin had appeared a year before, and of late there had been great pruritus of the whole body. When examined his clothing was found to be infested with pediculi, and his skin bore the marks of having been exposed to the attacks of these parasites for a long time. The upper part of the back, and the parts which were brought most closely into contact with the clothing, were covered with the characteristic linear excoriations, mingled with ecchymatous pustules. Almost the whole surface of the skin was covered with a marked pigmentation, more pronounced about the waist in front, and in the scapular and sacral regions behind. The scrotum was pigmented, but not to the degree common in Addison's disease. The mucous membrane of the mouth was the seat of numerous brown patches, irregularly distributed and sharply defined. The glans penis also showed some dark brown spots, as well as the mucous surface of the prepuce.

The second case was that of a former coachman,

⁴ *Bulletins et mémoires de la Société des Hôpitaux de Paris*, Décembre 18, 1891.