

being conducted by American investigators. Loeb, Morgan, Kahlenberg and True, and others are important contributors. Loeb's researches especially on artificial parthenogenesis, and upon the effects of ions of various sorts upon muscular and neural activity, may be mentioned as significant examples of the value of the conceptions of osmotic pressure and electrolytic dissociation in revealing the secrets of cell life. The most recent publications of the same investigator indicate that the domain of toxicology, with its poisons and anti-poisons, and even the "intermediate" bodies may be successfully invaded by the physical chemist.

From the various observations touched upon in what has preceded, three points seem especially worthy of emphasis:

1. The extraordinary variety and complexity of the chemical substances given off by the cells to the lymph and blood.
2. The chemical specialization of the various tissues of the body; and,
3. The value of chemical and physical conceptions as working hypotheses in the interpretation of life phenomena.

When we regard the blood serum in the light of these newer studies; when we think of the host of substances derived from the food on their way to hydrolysis or oxidation on the one hand, or to a larger synthesis on the other; when we recall the enormous number of receptors, immune bodies and intermediate bodies, complements and anti-complements, ferments and anti-ferments, coagulins, etc., which the blood of every higher animal must contain; when we think of the constancy of osmotic pressure retained despite the presence of a variety of dissociable salts in solution, we are led to exclaim with greater meaning than even Mephistopheles could have attached to the words: "Verily 'Blut ist ein ganz besonderer Saft!'"

The conception of a chemical differentiation of the tissues more divergent even than that which characterizes their morphology promises to be most heuristic.<sup>3</sup> Even though Ehrlich's hypothesis should later prove to be insufficient, and considering the present crude state of our chemical knowledge of the body, there can be but little doubt that it must be replaced or at least supplemented later by still more far-reaching speculations; it is at the present time stimulating a whole series of investigators to fruitful original research, and no more can be asked of any hypothesis. As long as it continues to lead to discoveries of importance, we may cling to it and utilize it. Only when it ceases to exercise a heuristic influence need we cast it aside for another more potent. Certain it is that aside from the chemical and physical peculiarities common to protoplasm in general, there are a host of special activities localized in the cells of different regions of the organism, the necessary consequence of ontogenetic development and a long phylogenetic history.

One can not help but be impressed with the fact that the important discoveries are being made by men who, no matter what their ultimate beliefs, in their work

3. Bichat, the founder of the science of histology, differentiated the tissues from one another chiefly by means of chemical reagents. He used the microscope only to a slight extent, and found it of but little use in his researches. Since his time, histologists supplied with a perfected instrument, have enthusiastically prosecuted microscopic research, very often, it is to be feared, to the neglect of chemical histological methods. Both morphological and chemical methods are of value to the histologist; they are reciprocally helpful. If morphologists would pay more regard to the methods of the chemists and chemists would take the trouble to more carefully enter into the thought of the morphologists, we should have better balanced views of histology and cytology than some of those which confront us in current text-books and periodicals.

avoid animistic hypotheses and animistic phraseology, and with René Descartes, choose the guiding hypothesis that vital phenomena are resolvable on analysis into the same elements as those underlying all other phenomena of the physical world. The mysteries of matter, energy and ether may never be fully explained to us, or they may ultimately be satisfactorily interpreted in terms of some grand monistic hypothesis. For the present this matters but little to us. It is enough that mechanistic conceptions are leading to discoveries of the greatest value for the alleviation of the sufferings and increasing the joys of mankind.

We have good reason to be proud of the progress already made in the unveiling of both the general and special processes which go on in the cell. Let us hope that in the near future, the investigators already at work, together with new men and new methods, may tear away more of the coverings which prevent our clearer insight; it is not, I believe, too much to hope that the present generation will be permitted to view with considerable distinctness many of the subtle processes which go on in the cell but which as yet we only dimly and vaguely begin to perceive.

## Clinical Report.

### GASTRO-JEJUNOSTOMY FOR STENOSIS OF PYLORUS—POSTMORTEM SIX YEARS LATER.

A. H. CORDIER, M.D.

Professor of Abdominal Surgery, University Medical College; Ex-President Mississippi Valley Medical Association.  
KANSAS CITY, MO.

Mr. C., aged 38, eighteen years ago began having digestive trouble. It was noticed at that time that solid particles of food in the stomach gave rise to more or less pain. A year or so later, vomiting began as a symptom. This vomiting was usually produced by the presence of food in the stomach. After the stomach was emptied the pain would cease, and the patient would be fairly comfortable until after another meal. On one or two occasions he had quite a perceptible show of fresh blood in the vomited material. This condition of painful digestion continued up to the time of my first examination. In addition to the above history I learned from the patient that large quantities of material would be thrown up that had been retained in the stomach for two or three days. As much as twelve or fourteen pounds of strongly acid, offensive material would be thrown up from the stomach at one time. This usually brought some relief, but even when the stomach was emptied of its solid contents gaseous distention would go on producing great distress from the pressure of the enormously dilated stomach. Cardiac and pulmonary dyspnea was a very prominent symptom as a result of this pressure against the diaphragm.

He had lost very much in weight at the time I saw him, and weighed only 115 pounds, was taking 20 grains of morphin a day, and was in a desperate condition in every sense of the word. My examination revealed an enormously dilated stomach and a very much emaciated patient. There was no tenderness on pressure at any spot over the abdomen; no enlargement or induration could be detected through the thinned abdominal walls. A diagnosis of pyloric obstruction resulting from the healing of a non-malignant ulcer was made. An operation having in view the establishing of a free communication between the stomach and the lower alimentary tract was advised and accepted.

It was noticed in the examination that the pylorus was very low and unusually far to the right of the median line. From this reason, at the time of the operation, the incision was made in the right semilunaris, believing that it would give the near-

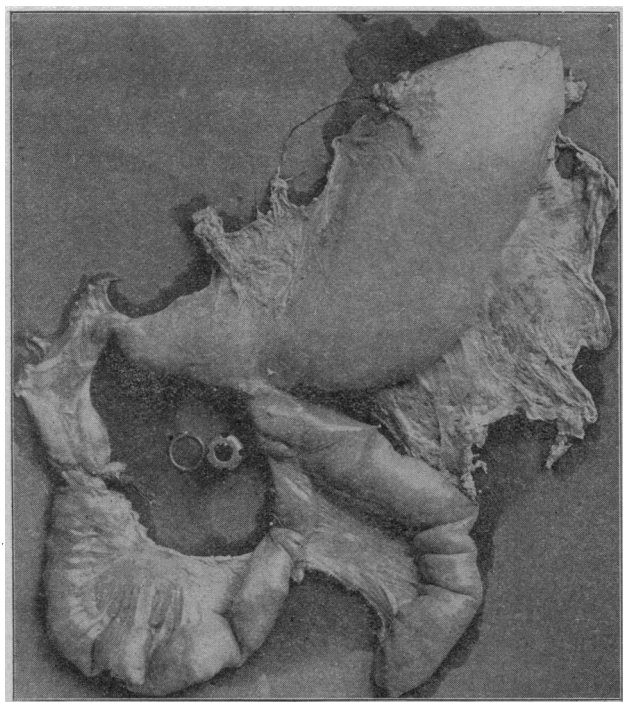
est approach to the most dependent portion of the dilated organ. The correctness of this decision was verified at the operation. I found on opening the abdomen the stomach very much dilated, but in position as before described. Believing, as I do, that all of these operations should be primarily drainage procedures, the anastomosis was made nearer the pyloric end of the stomach than that usually advised or found necessary. The incision in the stomach was made in its anterior wall about four inches from the pylorus. A coil of the jejunum 15 or 18 inches below the pylorus was selected as the suitable site for the incision in this portion of the canal. The usual precautions were used in the application of the sutures in the use of the Murphy button.

The operation was quickly performed and the patient returned to bed in good condition. Following the operation there was no unpleasant symptom. In a few days he was able to take the necessary nourishment without any inconvenience or pain following its ingestion. The morphin was withdrawn from him, and at the end of three weeks he was not only broken of his morphin habit, but was able to return to his home, taking both liquid and solid nourishment with perfect comfort. He continued to improve until his former good

valvular action that prevented the contents of the stomach from going into the upper coil of the bowel. A similar arrangement seemed to exist preventing the bile from going into the stomach. On filling the stomach with air or water not one drop or bubble could be forced through the pylorus. The water would enter the lower segment of the bowel with perfect ease, and none at all would go into the upper segment until after the stomach and lower segment of the bowel were thoroughly distended.

As remarkable as it might seem, the Murphy button, instead of passing into the intestine and finding its way out into the external world, as is usual, had dropped into the stomach and remained there for nearly seven years, or until the time of his death. Its presence in the stomach had never given rise to a single symptom. One end of the button was very much destroyed, presumably by the secretions of the stomach.

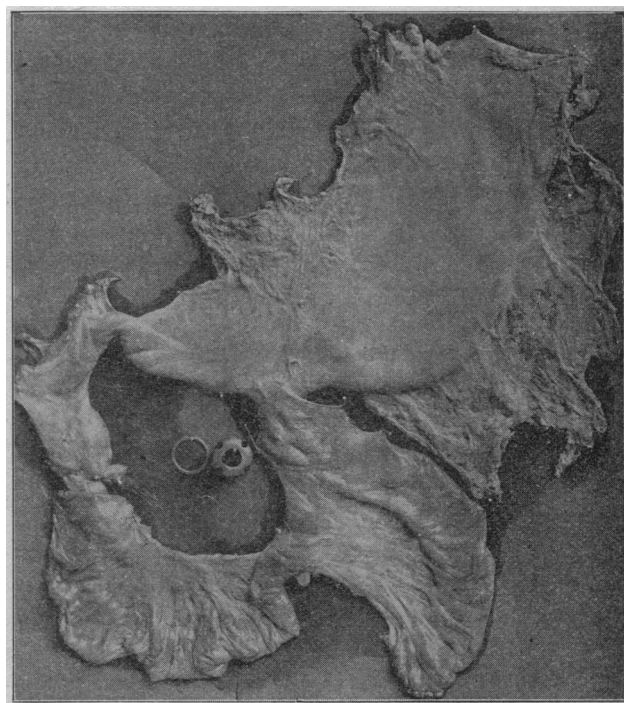
The accompanying illustrations show very distinctly the strictured condition of the pylorus, also the perfect anastomosis between the bowel and the stomach. It also shows the distended condition of the stomach and the lower segment of the bowel with very little distention of that portion of the intestine above the site of the anastomosis.



Gastrojejunostomy (Murphy button). Patient died of pneumonia seven years later. Stomach is filled with air in this picture. Notice difference in size of distal and proximal ends of bowel; very little air in duodenal end.

health and weight were regained. He increased in weight until he weighed 180 pounds, and was strong and able to do any work that was necessary for him to do. His digestion was perfect and free from pain; the gaseous distention disappeared and the stomach seemingly regained its natural size and tonicity. He continued in this state of health for six and one-half years. He was then taken with acute pneumonia, and within two weeks died as a result of this attack.

I was fortunate in being able to make a postmortem in this case. On examining the stomach I found that there was a complete obstruction of the pylorus; that the stomach had regained its former size; that its muscles were well developed and in a healthy condition; that the portion of the duodenum and jejunum above the point of anastomosis, while in a healthy condition, showed well-marked evidence of atrophy from disuse. At the site of the anastomosis there was absolutely no omental or other adhesions except those made by the union of the bowel to the stomach. The opening from the stomach into the lower segment of the bowel was as large seemingly as at the time of the operation. There appeared to be a species of



Gastrojejunostomy (Murphy button) nearly seven years ago. Stomach removed from patient dead of pneumonia.

While the dropping back of the button into the stomach might be used by some as an argument against its use, this objection would certainly lose its force from the fact that not a symptom was produced by its presence, and also from the fact that the time of performing the operation is very much shortened, a no small item in many of these cases. The greatest of all in favor of the button is the fact that nearly everyone of these cases recover from the operation if the work is properly done.

"Interviewitis" is a word nearly as good and entirely as bad as many that have been recently coined, and it is surely on a par with the thing it is designed to name. Almost every week one sees reports of interviews in the daily papers, all properly earmarked, none ever disavowed, in which it is plain that the doctor has been only too eager to be quoted. The interview is usually upon a matter about which the physician named has little knowledge and no special qualification for instructing the lay public whatever. His opinions are therefore without weight, and are almost always absurdly trite or erroneous.—*Amer. Med.*