fever, infection and parotitis may occur." He adds: "Points which may guide us are, the more abrupt onset in endocarditis, the absence of any regularity of the pyrexia in the early stage of the disease, and the cardiac pain. Oppression and shortness of breath may be early symptoms in malignant endocarditis. Rigors, too, are not uncommon. There is a marked leucocytosis."

In this case we had the abrupt onset and irregular pyrexia; but never any cardiac pain and little or no oppression or shortness of breath until the last week. Leucocytosis was very marked on the eighteenth day.

Although malignant endocarditis most commonly occurs as a secondary affection as in acute rheumatism, pneumonia, or septicemia, it is recognized as sometimes occurring as a primary disease. Such seems to be the case under consideration. At any rate I have been unable to discover any antecedent septic condition. All the lesions found were apparently secondary to the endocarditis. A possible exception is the nephritis, but of this there had been no symptoms, for I found the urine normal two months before this illness and also at the beginning of the attack. As for the small abscess in the left kidney, this was most likely metastatic. If these renal conditions are considered secondary, as they probably should be, we seem compelled to call the case one of primary malignant endocarditis. Perhaps it would be better described as a case of septic endocarditis, in which the origin of the infection was not discovered.

The autopsy and bacteriological examinations were made by Dr. R. A. Woodruff, of Pittsfield. The case was seen in consultation by Drs. Henry Colt and L. C. Swift of Pittsfield and by Dr. W. Gilman Thompson of New York.

DISCUSSION.

DR. C. F. WITHINGTON of Boston: I have been very much interested in this extremely carefully prepared report of this case of Dr. Adams'. He mentioned the differential points in the diagnosis of this disease and typhoid fever. It seems to me that it is one of the most important discriminations to bear in mind. In the cases I have seen the temperature was almost always irregular with marked evening exacerbations. There were other signs of sepsis, including the one he mentions and emphasizes — petechiæ on the surface of the body. I saw a case a few weeks ago at the New England Hospital with multiple abscesses. There was an abscess of the ankle joint, one on the buttocks and one on the back. The sero-pus from one of these abscesses showed the streptococcus.

One very important point is the prognosis. It is a disease that is almost invariably fatal, although I have seen two cases which I have reason to believe were ulcerative endocarditis and which did not die. Two years ago I saw the first of these. The temperature was irregular, chills, sweating, with no other explanation than that suggested by the endocardial murmur. The diagnosis was confirmed by Dr. Whittier, and the patient, after a protracted illness, recovered. I have recently had a case at the hospital of a man of twenty-six. He entered the hospital April 19. He had had measles four weeks previously, but had recovered from them, and two days later had a chill, followed by an irregular temperature, cough, sweat and chills. Four

days before coming into the hospital he had phlebitis, the limb being dark purple and swollen. The heart was enlarged, the action very violent, and the rate 160 to 170. There was marked gallop rhythm. He also had limited but distinct areas of consolidation in both lungs, which were believed to be embolic pneumonia. Six weeks before coming into the hospital he had had acute gonorrhea. That took place on the 17th of March, and the measles on the 22d of March. Forty-eight days after the gonorrhea blood cultures were taken and the gonococci were found. There was no doubt about the accuracy of the observations, and the diagnosis of malignant gonorrheal endocarditis seems established. Dr. Adams' case was from staphylococcus infection. This one was from gonococcus infection. This patient gradually improved, and his temperature became normal. For a month he has been practically well, his phlebitis has largely disappeared, and he is walking about. He has no symptoms at all now, though there is still a murmur. The white count has gone from 16,200 down to 9,400. I think we may say that although such cases are usually fatal, and the prognosis always exceedingly grave, occasional cases may recover.

DR. HENRY JACKSON of Boston: It has always been my opinion that malignant endocarditis was fatal. I saw the case referred to by Dr. Withington in consultation with Dr. Ames, and we were much pleased to have the diagnosis confirmed by him. I look upon the case as the first one I have known to get well of this disease.

DR. G. S. C. BADGER of Boston: There are two clinical forms of malignant endocarditis, — the non-septic and the septic. The former is attended by bland infarcts, suppuration does not follow, and therefore there are no abscesses. Chills and sweating are not very common in this type of the disease. In the septic variety the infarcts suppurate, abscesses develop, and chills and sweating are very common. In the case mentioned by Dr. Withington there were multiple abscesses accompanied by chills and sweating. In the case reported by Dr. Adams the infarcts were bland and chills were not common. Both these varieties may be due to the same organism; for example, the streptococcus.

ON "VARIANT" INFECTIONS: WITH REPORT OF CASES.

BY THOMAS HORACE EVANS, M.D., PHILADELPHIA.

THE nominalism in medical theories must be resigned in view of the principles of cellular pathology and its further development.

No longer will a disease be thought of to possess, as an entity, the body and mind of the unfortunate who suffer it. For we are able, now, to reduce disease to a matter of physiochemic reaction. And the terms of disease are to be read in "replacement of radicals"; and in certain peculiar, primary, protoplasmic changes affecting the original faculties of irritability, contractility, metabolism, respiration and reproduction; and in the modifications of tissue and organ forms and functions in consequence.

Neither can we neglect the factor of personality in disease. Inheritance and environment have put together a vitalism, a mechanism, if you will, that will take its own nature into the pathologic equation.

I have been interested to note the effects of a

small epidemic of erysipelas within one block of my office, during the recent two months (May and June). All the cases referred to below occurred in that vicinity, a laboring district, and the free intercourse of the people therein will be of importance in weighing the facts. Additional cases occurred, not in my practice, during these two months and in the neighborhood.

Erysipelas, at date, is not a reportable disease in Philadelphia.

CASE I. Mrs. D., forty-nine years, began a typical attack of erysipelas two days before I was asked to visit the case, May 18, 1904. Facial swelling and edema, with boardlike resistance (on palpation); redness and pain being intense.

In a few days the whole cranial scalp was invaded. Ichthyol 50% and dil. phenol applied, Tr. Ferri Chlorid. and salines internally administered. No unusual symptoms developed and a cure was effected in fifteen days, at which time the case was dismissed with suitable tonics. However, on May 29,

CASE II developed. Esther D., the ten-year-old daughter of Mrs. D., began to complain of sore throat, and irritative cough which seemed accountable on the score of roughened vesicular breathing and a temperature of 102.4° F.

Usual treatment, however, failed to relieve. But on ordering a Tr. Ferri Chlorid. mixture the symptoms rapidly diminished. After-treatment consisted of iron, quinine and strychnine, cure resulting in the course of eleven days.

CASE III. Harry A., eight years, living half a block beyond the preceding family.

May 20, gave history of having hair cut in neighboring barber shop three days previously, after which redness and swelling appeared around, and particularly behind, the right ear, extending over the helix. This redness and swelling had partly diminished when I first saw the case. At that time I noticed that the right parotid gland seemed swollen, and diagnosed unilateral mumps. Ichthyol was applied, and a Pot. Citrat., Liq. Ammon. Acetat. mixture given for the fever, which was 101.5° F. The parotid swelling continued until a small abscess developed beneath the ear, and to prevent any mastoid infection, the abscess was incised. Considerable purulent matter readily discharged and relief occurred at once. The left parotid showed a sympathetic inflammation soon afterward, which was reduced with an ichthyol ointment.

At this time iron was ordered, and the boy was well in about two weeks.

CASE IV. Mr. A., the father of Harry A., developed sore throat May 26, which was quickly relieved on being touched with iron and pot. chlorat.

CASE V. Elsie B., fourteen years, living on the next street, parallel with the one where the preceding families reside, developed sore throat June 5. It appeared to be a follicular tonsillitis. There was also a peculiar, general glandular swelling behind the ears and along the mandible, as well as by the margins of the trapezius and sternocleidomastoid muscles.

Internal ferric medication brought about some relief, but the disturbing symptoms continued active for over eight days; meanwhile,

CASE VI. Mrs. M., aged seventy-two years, the grandmother of E. B., and living in the same house, developed erysipelas June 11. She told me that for two weeks her nose had pained her, and that latterly there had been swelling which became so intense as finally to alarm the family.

From the external meatus of the nose the erysipela-

tous inflammation spread viciously, covering the whole of the face, nose, both ears, and part of the frontal and parietal scalp.

Usual treatment rapidly prevailed, although two relapses complicated her recovery. The patient, at this writing, July 13, is still very feeble, by reason of age and a chronic nephritis which shows a tendency to acute exacerbations.

CASE VII. Before Mrs. M.'s recovery, on June 29 her grandson, Harry B., twenty-three years of age, developed a follicular tonsillitis similar to that which his sister had had, but fulminating and with a higher range of temperature. Vigorous medication locally and internally soon controlled the case, and his cure followed in six days.

CASE VIII. Mrs. B., the mother of H. B., showed some redness and swelling of the skin below the right ear; swelling of a patchy, erysipelatous nature, on June 20, to which was applied ichthyol, with the best results.

I do not care to say whether it was due to some passing irritation or really of specific cause.

CASE IX. Alice S., twenty-nine years, residing in the house where my offices are, June 2, and also 10, showed slight erythematous patches on center of forehead, which were relieved by iron and quinine internally, with local ichthyol plaster. Also,

CASE X, Harry S., aged sixty-nine, father of A. S., June 5, developed a typical erysipelatous patch around the left eye, and on the left aspect of the nasal arch. After five days of regular iron and ichthyol treatment all the trouble disappeared. He was left with a quinine tonic.

I could parallel this epidemic with cases of other infections. The argument, however, will speak for itself.

I believe it was Dr. M. H. Fussell who, in a lecture to the Senior (1899) Medical Class of the University of Pennsylvania, remarked on the frequency with which sore throat appears in families at the time of scarlet fever or diphtheritic infection therein,—sore throat which cannot be determined to be specific.

But why should we not associate such opportune appearances? We have evidently to deal with a specific cellular reaction, the mode of infection of which should be only too easy to explain. The marvel is that isolation of erysipelas, as well as other transmissible diseases, should not be the rule.

Possibly the day is near when variant manifestations of disease will be clearly recognized. The relation of tonsillitis, glandular involvement, and mucous reactions of many sorts are to be plainly seen in many forms of so-called specific disease. With a recognition of this fact, infectious variants have a most decided element of danger.

Samohrd¹ speaks of a general reaction of mucous membranes in typhoid attacks, when he describes the symptoms of hemorrhagic typhoid. It is possible, then, that from these mucous membranes typhoid infection may be disseminated.

The writer² ventures to suggest that there may be varying modes and manners of infection according to the state of the cycle of development of the pathogenic organism, as that proceeds or its toxins develop. Further, it is quite possible that the essential tissues of the body have a selec-

¹ Sbornik Klinicky, Tomo V, fasc. 1, 1903.

² Paratyphoid—Medical News, September 3, 1904.

tive preference for certain toxins or micro-organisms, or for them in certain stages of their cycles of development.

Following this theory we may come to find out that a number of related diseases are really only different aspects of one great process, in which variable factors play a part, factors of the life cycle of the parasite, or micro-organism, its toxins, and the physiochemic nature of the histologic tissues invaded.

The elemental histologic tissues are four. We should be able to reduce disease to a least common multiple of these elements, and in doing so, perhaps we may find that the primary changes are not so numerous; anabolic and katabolic elevations and depressions, chemic changes and functional mutations, with, on the contrary, a greater number of diseases traceable to the same micro-organism, toxins, or species of parasite. It is thus that we may come to admit "variant" infections.

GASTRIC ULCER IN CHILDREN.

BY ELBRIDGE G. CUTLER, M.D., BOSTON.

(Concluded from No. 14, p. 372.)

LEITH³³ records a girl aged ten, always remarkably well, who, on the 5th of February, developed croupous pneumonia of the left lung which went on to convalescence. The beginning of March she began to cough and to perspire freely at night. The temperature which had been normal a few days before began to rise, especially toward evening. The physical signs were negative over both lungs save under the left clavicle where the percussion note gradually became somewhat hyperresonant and the breathing cavernous with plentiful crepitations. Soon two small abscesses formed in the second left interspace toward the axilla. A few days later a left-sided empyema was opened with resection of portions on the fourth and fifth ribs. There was no improvement. The temperature remained irregular and the pulse and breathing rapid. Delirium became more continued and severe. Restlessness and delirium increased with frequent moaning but no complaint of pain. Death on April 25.

At the post-mortem examination an empyema cavity was found on the left side with a perforation of the diaphragm to the left of the pericardial sac. Blood was found in the intestines and the stomach showed an ordinary perforating ulcer nearly circular, measuring $\frac{1}{4}$ in. transversely and $\frac{1}{8}$ in. longitudinally. It was just in front of the greater curvature, $4\frac{1}{2}$ in. from the cardiac and 8 in. from the pyloric end. It was terraced on the side next the greater curvature and rounded and smooth on the other. There was no sign of thickening around it on the mucous coat; its floor was formed by the peritoneal and remains of the muscular coats. The ulcer was adherent by its floor to the spleen, some suppurative lymph intervening and a suppurating track passed upward and inward between the adherent spleen and stomach directly to the perforation in the diaphragm.

Donne's¹⁷ case, which reports a cure from simple lesion in a child, is as follows:

In the midst of a punctated redness within the upper half of the small curvature there was a dark-red plaited place, a little bit depressed beneath the surface of the mucous membrane, the size of a ten-sou piece. Divergent rays seemed to run out from its center in every

direction. The depressed spot was also in folds and the fibrous tissue was thickened showing a cure from a simple lesion.

The following case reported by Goodhart²⁵ I have included among the chronic ulcers from the description of the ulcer. Perhaps it should be classed with the acute cases:

Mr. Cock, one of the senior students and late resident obstetric assistant at Guy's Hospital, was called to see a new-born infant vomiting blood, from which it died thirty hours after birth. It was apparently well-formed and healthy, though a possibility of congenital syphilis existed. The stomach was distended by blood-clot and on turning this out, a small oval ulcer about $\frac{1}{2}$ in. long was seen at the cardiac end close to the greater curvature. The edge of the ulcer was peculiarly sharp and raised from the surrounding mucous membrane, it might almost be said to be knife-shaped and it was firm in texture and pink or vascular in appearance. In the bottom of the ulcer was a dark speck which, under a lens, proved to be an open vessel, a branch of an artery running along the greater curvature. The remainder of the stomach was healthy.

Cade¹¹ reports as follows:

Two months old. For one month sick with yellowish diarrhea and vomiting; this lasted for a fortnight and then death resulted.

At the autopsy on opening the abdomen there was a pocket containing yellowish fluid, very acid, and in considerable quantity. The pocket was limited behind by the pancreas, below by the mesocolon and the transverse colon, and above and in front by the posterior surface of the stomach and anterior part of the liver. Pressure on the stomach made the gas escape into the pocket.

The stomach was opened and showed towards the pyloric region above a single ulceration, rounded, larger than a fifteen-centime piece, and with clean edges, adherent at its anterior portion to the liver save below where one could pass a grooved probe without difficulty.

The stomach contained a yellowish liquid, acid, like that in the retro-stomachal pocket. There was no other lesion of the gastric mucous membrane. The vomiting and diarrhea had no special characteristics. There was never hematemesis or melena.

Wertheimer's⁴⁸ case of supposed gastric ulcer in a girl of ten is interesting, and though the child recovered, the history is so clear that I think he established his diagnosis. For several weeks the child had suffered from loss of appetite, feeling of fullness and distention in the gastric region and occasional nausea after meals. She looked badly. One day, on jumping from a ladder, the child had a sudden intense pain in the epigastrium which after a time abated. Several hours later the pain increased, nausea set in and a small amount (a few teaspoonfuls) of clear fluid blood was vomited; the next day there was blood in the stools. For a week there was daily, sometimes several times in the day, hematemesis; it was always small in amount, sometimes fluid, sometimes loosely clotted. Blood was found in the stools several times. Before the hematemesis there was almost always a severe cardialgic attack and nausea. Besides the cardialgia after food there was several times vomiting in the early morning with a fast-ing stomach, without previous nausea, of a watery, sour fluid. The appetite was much diminished and the bowels were constipated. Between the attacks there was epigastric tenderness and a tense belly. The child was kept in bed and given an exclusive milk diet for a week, which was well borne and caused neither pain nor vomiting. Later, white bread, milk soups and wheat flour or groats were added; then raw ham, cold