

increase in the valve mischief, a reduction in the ratio of the corpuscles is followed by shortness of breath, palpitation, and signs of heart-failure. The value of iron in this condition is well known, and its combination with digitalis a universal practice. Arsenic is also indicated in these cases, particularly in children, or if, as sometimes happens, iron does not agree. In June of this year I saw a lad J. W., æt. 14, who had had chronic valve-disease for four years. He had been wintering in the South, and went afterwards to the Arkansas Hot Springs. When I saw him the anæmia was very marked, and he suffered from breathlessness on the slightest exertion. There was no cardiac distress, and the compensation was not seriously disturbed. At the Hot Springs he had several chills, with fever, for which he had taken quinine. He was ordered Fowler's solution of arsenic, beginning with M iii, three times a day, and increasing to M vi, if well borne. He had been taking an iron and strychnine pill for several weeks, and had with him a boxful, which he was advised to finish. Digitalis was prescribed, but was not to be taken unless there were signs of heart-failure. The diet was carefully regulated. The lad improved rapidly, and within six weeks had a good color, and had gained several pounds in weight. He had not needed the digitalis. The arsenic was well borne. The improvement had continued on the 3rd of this month. Possibly here there was a malarial taint but, in any case, if medicinal agents had anything to do with the rapid improvement, the credit is due to the Fowler's solution.

2. *In Malarial anæmia.*—The value of arsenic in chronic ague poisoning is so well recognized that I need scarcely detain you with the narration of cases in support. There have been several at my clinic during the past year in which the improvement in the blood condition, as tested by the hæmacytometer, has been very remarkable. One case in particular from Cape May, I may refer to, as the patient, with enlarged spleen, had on two occasions hæmorrhage from the stomach. The arsenic in this case was pushed for several months in increasing doses. At one time he took Mxxxvi of the Fowler's solution daily. When last heard from, in July, he was at work, and had gained in flesh and strength. On May 12, the date of the last blood count, the percentage was over eighty (it had been scarcely fifty), and the spleen had diminished materially in volume. In certain of these cases the ratio of the corpuscles may increase rapidly without any essential change in the volume of the spleen. In the case of M.D., a girl of 15, who has been in the University Hospital on several occasions for the past two years, the arsenic, which was very persistently employed, does not appear to have reduced the spleen in the slightest degree, and yet under its use the corpuscles rose to eighty-five per cent. In this instance, with a history of malaria, there is evidence also of congenital syphilis, to which may possibly be due the splenic enlargement. Injections of

arsenic into the substance of the organ were tried without benefit.

3. *Certain Anæmias of Gastric Origin.*—As a tonic in debilitated states of the stomach, arsenic has long been a favorite remedy with many practitioners. It is sometimes also of great service in the anæmia of chronic gastric catarrh, particularly in alcoholic patients. A good illustration of this was under my care at the Philadelphia Hospital this spring. W. G., aged 25, waiter, hard drinker, history of dyspepsia for several years. Admitted April 5 with anæmia and attacks of giddiness. Ill for ten days; vomiting, pain in stomach, and fainting spells on attempting to stand. Had been failing in strength for some time and getting pale. Had suffered from palpitation, and said he had vomited blood. He was profoundly anæmic, and could not stand without danger of fainting. Tongue coated; great irritability of stomach; vomiting on the slightest provocation; great throbbing of abdominal aorta. He was kept at rest, given a milk diet, and Fowler's solution in 3 drop doses. The red corpuscles were not more than twenty-five per cent., and the coloring matter about the same. The improvement was rapid, and by the 21st the corpuscles had risen to over forty per cent., and the gastric irritation had almost disappeared. The arsenic was well borne, and was gradually increased to Mvii t. i. d., and on May 4 he was ordered small doses of nitromuriatic acid. On May 17 he left the hospital with a fair digestion and, for him, tolerably good color. On June 24, when re-admitted with extensive pleuro-pneumonia, he stated that he had recovered strength rapidly, and had been at work. Possibly in this case, there was ulceration of the stomach in addition to the chronic catarrh; but, whatever the condition, it was one in which the arsenic seemed to be highly beneficial, and, as he received no other medication, we may reasonably attribute to it the stimulation of the blood-making function. As we shall see, there are anæmias of gastric origin in which this drug is powerless. There are some of the secondary anæmias which have, in my experience, been apparently benefited by the use of arsenic.

Turning now to the primary group, we have here again for convenience to make a division of the cases. There is, first, a large section of what may be called cytogenic anæmias, in which the reduction and alteration in the corpuscles is associated with evident changes in the hæmatogenous tissues,—the spleen, lymph-glands, and bone marrow. Sometimes these changes are accompanied by an increase in the colorless corpuscles of the blood; and, depending on the organ involved, we then speak of splenic, lymphatic, or medullary leukæmia. If there is no marked increase in the white corpuscles we call the cases splenic anæmia, lymphatic anæmia (Hodgkin's disease), and medullary anæmia. The pronounced leucocytosis in certain of the cases, which gives a special character to the blood, is probably not such an