He says that these were "cases in which there had been no previous loss of blood, no exhausting diarrhœa, no chlorosis, no purpura, no renal, splenic, miasmatic, glandular, strumous, or malignant disease."

Of the individual symptoms of the affection, I shall not speak fully, as most of them are common to all forms of anæmia, but one or two demand special attention. I have already told you of the state of the blood in this patient, and of the remarkable diminution in the red corpuscles. Instead of 5,000,000 to the cubic millimetre, the number is reduced to 970,000. In over fifty cases of diseases, accompanied with wasting, in which I have carefully counted the corpuscles, pernicious anæmia is the only one in which I have met with a reduction in the red corpscules below 1,000,000 to the cubic millimetre. Even in an instance of severe hæmorrhage—hæmoptysis extending over a week—and during which time the man lost nearly ten pounds (by measurement) of blood, the number of corpscules was 1,390,000 per cubic millimetre. The reduction may be much more marked than in this case; the most striking instances which I have found recorded are given by Quincke,* in one, 330,000 per c. m.; and in another, 143,000 per c. m.! Strange to say, this patient recovered after transfusion, and the number of corpuscles rose from 143,000 on the 22nd of May, to 1,234,000 per c. m. on the 5th of August.

The colour of the blood is much altered; the drop, as expressed from the finger tip, has not the rich red tint of health, but is lake coloured or like claret and water. In some forms of anæmia, particularly chlorosis, the hæmoglobin is greatly reduced, even when the number of red corpuscles maintains a fair standard. Thus, in two cases of chlorosis, while the globular richness was 87·8 and 92 per hæmic unit,† respectively, the hæmoglobin, as estimated by the hæma-chromometers of Quincke and Gower was 64, and 66 per cent.; that is to say, the individual corpuscles were poor in colouring ingredients. In pernicious anæmia, the loss in colour is usually proportional to the corpuscular poverty as in this case, in which the red corpuscles are only 19·4 per hæmic unit, and the hæmoglobin 20%.

* *Archiv. f. Klin. Medicin. Bd.* xx., 1877.

† "With normal blood the average number of corpuscles in two squares of the Hæmacytometer (containing ·00002 cubic millemetres of blood is 100). I propose, therefore, to take this volume of blood, ·00002 c. m., as the standard volume, and to term it "hæmic unit." Thus the number of red corpuscles per hæmic unit is the percentage proportion to health." (Gowers.)

The microscopical characters of the blood in this disease are worthy of your closest attention, as I know of no disease in which that remarkably constant histological element, the red blood corpuscle, undergoes such important modifications. I have studied carefully the blood in six instances of the disease, and in all there has been a striking uniformity in the microscopic features, which are as follows:—

1. Remarkable variations in the size of the red corpuscles, three sorts being distinguishable; (*a*) Giant forms; usually not very abundant. I have measured some of these as much as $\frac{1}{1700}$ and $\frac{1}{1800}$ of an inch in diameter. (*b*) Medium-sized cells, such as ordinarily met with; they constitute the larger proportion. (*c*) Very small corpuscles—microcytes—tolerably numerous; they are globular, and of a deep colour; they range in diameter from $\frac{1}{7000}$ to $\frac{1}{5000}$ of an inch.

Quincke has coined a term to express this great discrepancy in size, Poikilocytosis.* It is certainly a remarkable feature in the blood of this disease, and though not absolutely peculiar to it, yet, is much more marked, in my experience, than in leukæmia, splenic anæmia and Hodgkin's disease.

2. Great irregularity in the form of the corpuscle. The disc shape of the red blood cell is rarely departed from in health or disease, but in this affection, the margin of the corpuscles are indented and irregular, or there are various extensions of the stroma, giving to the corpuscles a balloon or hammer shape—alterations which cannot be mistaken for crenation.

3. The colourless corpuscles do not present any special characters, and are not actually, though they may be relatively, increased. The amæboid movements are active. In one or two instances they were reduced in size, and in a few cases in number.

* ποικιλος, variously formed.