

expect a greater contraction if the adrenalin were increased in the blood. With the enucleated frog's eye mydriasis is the rule with nephritics blood. In an attempt to control these apparently contradictory results, Schlayer resorted to experiments upon animals. He produced an adrenalin anemia by slow infusion of adrenalin in salt solution. By this means an increased amount of adrenalin was brought into the blood, as was shown by the mydriasis in the frog's eye. On testing this blood with fresh artery from the ox he found that there was less contraction of the artery than with normal rabbit's blood, a result analogous to that obtained with the blood of normal individuals and those suffering with nephritis. On adding adrenalin to ox blood and then testing the blood with an artery, an opposite result was obtained, the adrenalin blood causing a much greater contraction than normal ox blood. From this and other experiments he was able to demonstrate that an increased amount of adrenalin in the blood would only react to a fresh artery when both blood and artery were obtained from the same species. He concludes, therefore, that the Meyer test is misleading when the artery of an ox is used for testing the blood from any other animal. This probably explains the contradictory results in patients suffering with nephritis and re-opens the question as to whether adrenalin is increased in the blood in these patients.

The Demonstration of Parasites in the Blood.—STÄUBLI (*Munch. med. Woch.*, 1908, iv, 2601) demonstrated some time ago that trichina embryos are easily found in the heart blood of experimental animals, if one adds to the blood 3 per cent. acetic acid to luke the red cells and then centrifugalizes the specimen and examines the sediment, which contains leukocytes and any embryos which are present. More recently he has shown that the embryos may be recovered from the blood of the ear vein of experimental animals by the use of this method (given below), though the number of parasites is much less than in the heart blood. In seven guinea-pigs he found one to three parasites in the blood, in five of these, using only 0.05 to 0.3 c.c. of blood. He therefore believes that it is highly probable that in man the blood obtained from the finger or ear in cases of trichinosis may show the parasites, and thus excision of the muscle may be obviated. In filariasis the parasites are often present in such number that they are readily seen in preparation of fresh blood. Stäubli has had one case in whose blood this method gave negative results, but by diluting the blood with acetic acid and centrifugalizing he was able to demonstrate the filaria. He suggests the use of his method of examination in other conditions which, however, seem less promising. In using Stäubli's method only blood which flows freely should be used, and the pipette should first be washed out with 3 per cent. acetic acid. The apparatus must be carefully cleaned before using. The blood is then diluted with 10 to 15 volumes of the acid; 3 per cent. acetic is always strong enough to cause complete laking of the red cells, but weaker solutions were found to be unsatisfactory in some cases. So far as Stäubli has observed the acid is not injurious to the parasites. After centrifugalizing the sediment is examined fresh or smears are made and stained, preferably with Giemsa's or Jenner's stain.

Basophilic Granulation of the Erythrocytes in Embryos.—NAEGELI (*Folia Haematologica*, 1908, v, 525) has examined the blood of the embryos of the rabbit, guinea-pig, mouse, sheep, and pig, and in all of these he found basophilic granules in the red cells. He believes the same results would be found in the blood of human embryos if it were possible to examine the blood of embryos not still-born. In some of his specimens more than 70 per cent. of the red blood cells showed basophilic granules. The results in all instances were comparable. Very interesting findings were obtained from examining rabbit embryos of different ages. All specimens were stained with Giemsa's stain. (1) Embryos 0.7 to 0.8 cm. long. Practically all the cells are polychromatophilic megaloblasts, with relatively large well-preserved nuclei. There were many mitoses (monasters and diasters), always with basophilic granules in the protoplasm. (2) Embryos of 1.4 to 1.5 cm. Very many megaloblasts, both orthochromatic and slightly polychromatic were found, none, however, with basophilic granules. Ninety-five per cent. of these megaloblasts show small blue particles of nuclear material, usually three to five in number, often collected in small colonies, but occasionally isolated. Rarely these nuclear derivatives, when situated close to the nucleus, are stained deep red. The first generation of the blood cells (the large forms) lacks basophilic granules. The second (smaller) generation of erythrocytes even now predominates. Normoblasts are very frequent, always markedly polychromatophilic, and some cells contain a central red mass of chromatin, others many fine basophilic granules. In cells in which the polychromatophilia is less marked basophilic granules are fewer and coarser. Normoblasts in mitosis are always strongly polychromatophilic and show basophilic granules. (3) Embryos 2.2 cm. long. The blood of these embryos shows many rather large orthochromatic red cells, often with basophilic granules and frequently with a red chromatin particle centrally placed. The normocytes are the same as in the last group. (4) Embryos 5 cm. long. The majority of all cells are orthochromatic normocytes with basophilic granules. Often these cells show a red nuclear particle centrally placed; frequently the nuclear particle is situated peripherally. In the latter arrangement, however, the basophilic granules are never found in the same cell. (5) Embryos 10 cm. long. The normocytes are now lacking. Often one finds normocytes with centrally or peripherally placed nuclear particles. No cells are found which show basophilic granulation.

These results demonstrate conclusively the constant presence of basophilic granules in the blood of embryos. Whether the granules arise from the nucleus or the protoplasm, Naegeli is unwilling to state as yet. He describes and pictures three kinds of basophilic substances in red cells of embryos: (1) Red chromatin rests usually centrally placed, becoming gradually smaller with the increasing age of the embryo, may be found, especially shortly before birth. He has seen similar structures in pathological blood in man in cases of pernicious anemia, lead poisoning, and onemio pseudoleukemia. Not infrequently such cells show basophilic granules as well. (2) At times one finds one to two peripheral nuclear particles in the red cells, and these have also been found in pernicious anemia, lead poisoning, onemia from hemorrhage, and chlorosis. They represent the last remnant of the nucleus, and are not found in early embryonal life. (3) Particles which are apparently

snared off from the nucleus are found only in macrocytes and megaloblasts. When situated near the nucleus they stain red, while those peripherally placed are usually blue. They are readily stained with all nuclear dyes, and are easily demonstrated with the triacid stain. There is no connection between these and basophilic granules.

With the demonstration of large numbers of cells showing basophilic granules in the blood of normal embryos of all animals examined, a new and very important argument is brought forward for the regenerative character of these granules.

The Blood in Basedow's Disease.—GORDON and VON JAGIE (*Wien. klin. Woch.*, 1908, xxi, 1589) have made complete blood examination in 13 cases of Basedow's disease, including 7 incomplete cases, which they called Basedowoid. Normal red and white counts and normal hemoglobin were found, though occasionally a slight leukopenia existed (3500). Differential counts showed in nearly all a relative lymphocytosis up to 39 per cent., and a relative mononucleosis up to 13.5 per cent. In all cases in which the percentage of lymphocytes was normal, there was a marked increase of the large mononuclears, and the reverse was also true. They emphasize especially the value of these findings in the incomplete cases. The mononucleosis is to be explained by the splenic enlargement, which is not uncommonly found in this disease. They refer to the enlargement of the lymph glands, and think that this has something to do with the lymphocytosis.

Arterial Pressure in Tabes, and its Modifications during the Gastric Crises and Lightning Pains.—J. HEITZ and M. NORERO (*Arch. d. maladies du cœur, des vaisseaux, et du sang*, 1908, i, 505) have studied the blood pressure in tabes, especially in relation to the gastric crises and lightning pains, and find that in the former there is generally a marked vasoconstriction and hypertension, most probably secondary to the pain. Pain is possibly due to an irritation of the posterior roots, and is accompanied by the reflex phenomena of vomiting, constipation, and the vasoconstrictor influence which brings about the hypertension. This increase of the pressure is absent in those cases in which the pain is slight or absent. The hypertension becomes less marked in the older patients, possibly because the reflexes are interfered with in the progress of the lesions. The peripheral lightning pains are also associated intimately with the hypertension. As regards treatment, the inhalation of nitrite of amyl relieves the pains immediately, and this may be kept up even after the pressure has returned to normal. Injections of nitrite of sodium, 4 centigrams ($\frac{3}{4}$ grain) daily, do not seem to have any influence on either the pains or the hypertension. The gastric crises are accompanied by an acceleration of the pulse contrary to those in lead poisoning and gallstone colic. From their observations Heitz and Norero do not think that the cardiovascular system of tabetics suffers from the repetition of the pains as much as one would think.

The Inhibition of Pancreatic Activity by Extracts of the Suprarenal and Pituitary Bodies.—RALPH PEMBERTON and J. E. SWEET (*Arch. Int. Med.*, 1908, i, 628) have found that the suprarenal glands and the nervous portion of the pituitary body in dogs contain something which,

on extraction with salt solution and intravenous injection into dogs, cuts short the flow of pancreatic juice after the administration of secretin. It also prevents the stimulation of the gland by secretin if such an injection has preceded. This feature has been found up to the present time in no other tissues. It is independent of the general rise in blood pressure seen after the intravenous injection of adrealin and pituitary extracts. The inhibitory factor of extracts of the suprarenal gland seems to disappear by decomposition, oxidation, or other processes before the blood pressure raising element has gone. It would appear that the suprarenal and pituitary bodies have at least one property other than those generally recognized as present in them.

Rheumatic Myocarditis.—CAREY COOMBS (*Quar. Jour. Med.*, 1908, ii, 26) notes the importance of the involvement of the myocardium in patients who have had rheumatism, and thinks that so much attention has previously been focussed on the pericardium and endocardium in rheumatic subjects that the myocardium has been more or less overlooked. In his study, Coombs has reached the following conclusions: That dilatation of both ventricles is constant and often of considerable degree. The auriculoventricular orifices share in the stretching. Hypertrophy of both ventricles is usually present, and in many instances without any obvious mechanical cause. The changes in the heart are mainly microscopic, and consist of slight fatty changes in the cells, but the important point is the formation of nodules in the stroma. They appear to constitute an inflammatory reaction, and are characteristic of rheumatic, as opposed to other forms of carditis; similar changes are seen in rheumatic endocarditis, pericarditis, and subcutaneous rheumatic nodes. The toxemia accounts, no doubt, for the greater part of the fatty changes in the cells, as well as the dilatation and hypertrophy. Coombs thinks that the physical signs characterizing the rheumatic heart disease of childhood are, in the majority of cases, referable to the myocardial lesion and not to those of the serous layers. Death during childhood from rheumatic conditions is frequently directly due to myocarditis, while in later life also some deaths are due to this same cause.

Takes a Disease of the Deep Sensations.—J. GRASSET (*Scientific Series* 5, Montpellier, 1909) in this monograph presents a most thorough clinical study of the disturbances of the deep sensations in takes, the various analgesias, the abolition of the deep reflexes, trophic changes, arthropathies, etc.; gives a thorough anatomical and physiological study of the disease; and notes the importance of the involvement of the sympathetic system. He concludes that takes is a disease of the deep sensations, and that the disturbances of these play a more or less important role in each case; they are of such importance in its diagnosis that whether the picture be complete or not one cannot conceive of takes without disturbance of the deep sensations, while no other group of symptoms is so indispensable in a picture of the disease. The disturbances of the deep sensations most commonly met with are the analgesias on deep pressure (epigastric, tracheal, testicular, ocular, tendons, hoaxes, nerve trunks) or with disturbances of the stomach, heart, bones, and articulations and their consequences, hypotonia and the possibility of forced articular displacements, trophic disturbances, loss of tendon reflexes, loss of